

AD-760 097

DEVELOPMENT OF MANAGERIAL DECISION
CRITERIA FOR UTILIZATION IN THE DEPARTMENT
OF DEFENSE LOGPLAN PROCESS

Dale R. Mummert, et al

Air Force Institute of Technology
Wright-Patterson Air Force Base, Ohio

March 1973

DISTRIBUTED BY:

NTIS

National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

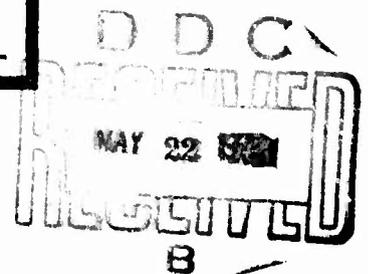
AD 760097



DEVELOPMENT OF MANAGERIAL DECISION
CRITERIA FOR UTILIZATION IN THE
DOD LOGPLAN PROCESS

Dale R. Muamert, Commander, SC, USN
Burnett R. Sanders, II, Lt. Colonel, U.S. Air Force
Roe E. Walker, Lt. Colonel, USAF

SLSR
24-73A



UNITED STATES AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
Wright-Patterson Air Force Base, Ohio

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. Department of Commerce
Springfield VA 22151

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

114 R

DEVELOPMENT OF MANAGERIAL DECISION
CRITERIA FOR UTILIZATION IN THE
DOD LOGPLAN PROCESS

Dale R. Mummert, Commander, SC, USN
Burnett R. Sanders, II, Lt. Colonel, USA
Roe E. Walker, Lt. Colonel, USAF

SLSR
24-73A

DDC
RECEIVED
MAY 22 1973
RECEIVED
B

DISTRIBUTION STATEMENT A
Approved for public release
Distribution Unlimited

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) Air Force Institute of Technology, School of Systems and Logistics		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	
		2b. GROUP	
3. REPORT TITLE Development of Managerial Decision Criteria for Utilization in the DOD LOGPLAN Process.			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Thesis			
5. AUTHOR(S) (First name, middle initial, last name) Dale R. Mummert (Commander, USN), Burnett R. Sanders, II (Lt Colonel, USA), and Roe E. Walker. (Lt Colonel, USAF)			
6. REPORT DATE 7 March 1973		7a. TOTAL NO. OF PAGES 105	7b. NO. OF REFS 35
8a. CONTRACT OR GRANT NO.		9a. ORIGINATOR'S REPORT NUMBER(S) SLSR-24-73A	
b. PROJECT NO.		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
c.			
d.			
10. DISTRIBUTION STATEMENT Approved for public release; distribution unlimited			
11. APPROVED FOR PUBLIC RELEASE BY JERRY C. HIX, Captain, USAF Director of Information		12. SPONSORING MILITARY ACTIVITY	
13. ABSTRACT			

SLSR 24-73A

DEVELOPMENT OF MANAGERIAL DECISION CRITERIA
FOR UTILIZATION IN THE DOD LOGPLAN PROCESS

A Thesis

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Logistics Management

By

Dale R. Mummert, BA
Commander, SC, USN

Burnett R. Sanders, II, BS
Lt. Colonel, USA

Roe E. Walker, BS
Lt. Colonel, USAF

March 1973

Approved for public release;
distribution unlimited

lib

This thesis, written by

Commander Dale R. Mummert, SC, USN

Lt. Colonel Burnett R. Sanders, II, USA

and

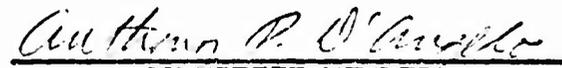
Lt. Colonel Roe E. Walker, USAF

and approved in an oral examination, has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT

DATE: 7 March 1973


COMMITTEE CHAIRMAN


COMMITTEE MEMBER

ACKNOWLEDGMENTS

Many people have provided ideas, advice, and assistance which have helped us accomplish this thesis. We would like to extend our appreciation to everyone.

Colonel Graham W. Rider, USAF, our thesis chairman, warrants a special thanks. His expertise, encouragement, and patience have guided us through a valuable professional experience. Logistics systems management and the DOD LOGPLAN became a new world for us.

Within the School of Systems and Logistics, there was one group that has been most helpful--Mrs. Virginia Eckel, the librarian, and her library staff. We would like to express our gratitude for their professional assistance. Hopefully, all the books we borrowed have found their way back to the shelves! Additionally, Lieutenant Colonel A. D'Angelo, USAF, Head, Department of Management Studies, provided valuable assistance and advice. His efforts have also been much appreciated.

And finally, to our wives we extend a thank you for the patience and understanding during this entire effort.

TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS.	vi
CHAPTER	
I. PROBLEM PERSPECTIVE.	1
Introduction	1
Background	2
The Problem Statement.	4
The Scope.	4
Objectives	5
Research Questions/Issues.	5
Methodology.	6
Organization	8
II. EVOLUTION OF THE DOD LOGPLAN PROCESS	9
Logistics Systems Planning Gap	9
Trends and Events.	11
First DOD Comprehensive Logistics System Plan	14
III. DEVELOPMENT OF MANAGERIAL DECISION CRITERIA.	16
Introduction	16
Selected Streams of Management Thought	16
Mee's Approach	17
Massie's Approach.	18
George's Approach.	19
Ross' Approach	19
Contributions to Managerial Decision Criteria	22
The Structural Group	23
The Behavior Group	31
The Process Group.	43
Functional Processes	50
Military Logistics Contribution.	53
IV. APPLICATION AND ANALYSIS	58
Introduction	58
The Application Approach	58
Application Results.	62
Analysis	65
Structural Group	66
Behavioral Group	69
Process Group.	71

Administrative Subgroup.	71
Functional Subgroup.	73
V. FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS . . .	75
Overview	75
Findings	76
Conclusions.	78
Structural Considerations.	79
Behavioral Considerations.	80
Process Considerations	80
Recommendations.	81
APPENDICES	
A. LOGISTICS PRINCIPLES	83
B. JUSTIFICATION MATRICES FOR TASK GROUPS	85
C. SUMMARIZATIONS OF TASK GROUP REPORTS	90
BIBLIOGRAPHY	100
BIOGRAPHICAL SKETCHES OF THE AUTHORS	104

LIST OF ILLUSTRATIONS

Figure	Page
1. Methodology and Problem.	7
2. Rational Sources of Managerial Decision Criteria for Logistics Systems Management. . . .	21
3. Theories of Organizational Behavior Related to Other Popular Ideas on the Subject.	40
4. Managerial Decision Matrix	57
5. Matrix of Task Group 6-70 (Communications Materiel Study Group: A Plan for Integrated Management of FSG 58) and Managerial Decision Criteria	63
6. Matrix of Task Group 2-71 (DOD Personal Property Disposal Organization) and Managerial Decision Criteria	64

CHAPTER I
PROBLEM PERSPECTIVE

Introduction

The Department of Defense (DOD) Logistics Systems Policy Committee (LSiC) was created in March 1970 to establish policy and assign responsibilities for the development of a DOD Logistics System Plan.¹ The committee and its purpose were an outgrowth of the Congress, Office of Secretary of Defense (OSD), and other DOD components' long desire for a DOD-wide, long-range plan for logistics systems development. The central purpose of the committee was to guide the construction and maintenance of a DOD Logistics System Plan (hereafter referred to as the "LOGPLAN"). The LOGPLAN was to serve as "an improvement plan for logistics systems development, complementing the Five Year Defense Program (FYDP)."² Both the committee and the LOGPLAN concept were milestones in logistics planning.

¹U.S. Department of Defense, DOD Logistics Systems Planning, DOD Directive 5126.43 (Washington, D.C.: Government Printing Office, 26 March 1970).

²Ibid.

The LOGPLAN was published by the LSPC on 15 May 1972. The Assistant Secretary of Defense for Installations and Logistics (Mr. Barry Shillito, incumbent) immediately directed the plan's implementation.³ The initial plan was a documented collection of logistic assumptions, principles and objectives, and included each DOD component's logistics system status and plans. Implementation and a viable change process remain to be achieved in the years ahead since the scope of the plan extends into the 1980 time frame. This thesis has directed its efforts to assist the LOGPLAN process by developing managerial decision criteria to support the application of one LOGPLAN principle--"Resource Limitations."⁴

Background

A short discussion of those aspects of the LOGPLAN and the underlying management theory are offered here to provide adequate background to the thesis problem. These comments clarify the theoretical framework that was used, support the authors' contention that managerial decision criteria were necessary and that the adoption of a set of criteria as part of the LOGPLAN was warranted.

The LOGPLAN was published to "provide a continuing approach to logistics systems development."⁵ It serves both

³U.S. Department of Defense, Assistant Secretary for Installations and Logistics Memorandum to DOD Components on 17 May 1972 directing implementation of LOGPLAN.

⁴U.S. Department of Defense, Logistics Systems Plan "LOGPLAN" 1972-1980, unnumbered DOD Logistics Systems Policy Committee document (Washington, D.C.: Government Printing Office, 15 May 1972).

⁵Ibid.

as a policy document and as a long-range logistics plan since it contains both logistics principles and objectives. These principles represent fundamental logistics truths and deal with such matters as organizational relationships, roles and missions, and accepted management practices (see Appendix A for a list of LOGPLAN principles). The application of policy in the planning process was the central issue studied in this thesis.

Ralph C. Davis' perspective on what policy is and how it is to be used was adopted. He sees policy as

. . . the factor that supplies a cogent relationship between business objectives and ideals on the one hand and organizational functions, physical factors, and personnel on the other. A business policy, then, is essentially a principle or group of related principles, with their consequent rules of action, that condition and govern the successful achievement of certain business objectives toward which they are directed.⁶

Sound logistics policy was seen as having two principal parts similar to business policy: "The principle that governs and the rule that indicates the general manner of its application."⁷ The LOGPLAN's effectiveness as a policy document was believed weakened since its principles lacked supporting "rules of action" to assure consistency of action, to prevent deviations from planned courses of action, and to furnish a basis that would guide both decision-making and future logistics planning. These fundamental considerations supported the authors' contention that "rules of action" were needed to

⁶Ralph Currier Davis, The Fundamentals of Top Management (New York: Harper and Brothers, 1951), p. 173.

⁷Ibid.

bridge the gap between logistics principles and their application in the LOGPLAN decision-making and planning processes throughout the Department of Defense.

The rules of action concept has been relabelled since today's use of "rules" was believed too restrictive. Creative planning, organizing, and controlling functions in logistics management warrant an environment where sound policy would generate sound management decisions. Thus, Ralph C. Davis' policy equation: Policy = Principles + Rules of Action . . . has been modified to mean principles need some managerial decision framework which was called criteria in this thesis. The managerial decision criteria developed in the thesis only demonstrate how they can facilitate the evaluation of proposed logistics system changes to the LOGPLAN and the necessary decisions that follow.

The Problem Statement

What managerial decision criteria can be applied to aid the decision-making process at the Logistics System Policy Committee level to facilitate evaluation of proposed logistics system changes to the LOGPLAN?

The Scope

A study of selected management literature and the development of a set of managerial decision criteria to support the first principle in the LOGPLAN (Resource Limitations) were the basic boundaries for the thesis. Two applications of the managerial criteria were analyzed to evaluate their adequacy and to determine if managerial decision

criteria can make a contribution to the LOGPLAN.

It is contended that the approach used to develop the managerial decision criteria for the first LOGPLAN principle can equally be followed to facilitate the policy application of other principles in logistics systems management.

Objectives

There were three primary objectives to be accomplished by this thesis: (1) to show that management literature and military logistics literature are a ready source of managerial decision criteria, (2) to develop a set of model criteria for the first LOGPLAN principle, and (3) to demonstrate that managerial decision criteria can strengthen the LOGPLAN process and the Logistics Systems Policy Committee's decision-making resource. By meeting these objectives the authors felt a contribution could be made to the LOGPLAN process. Its implementation and the change decisions that lie ahead for DOD managers and military commanders would be facilitated.

Research Questions/Issues

1. Determine the applicable management characteristics that can provide a basis for development of managerial decision criteria which can be applied in logistics systems management.
2. Formulate a set of managerial decision criteria for the first LOGPLAN principle (Resource Limitations) based on management literature.
3. Determine the adequacy of the managerial decision criteria as an aid to policy application in the logistics

systems planning environment of the Department of Defense.

Methodology

The methodology employed in conducting this thesis research and in attaining the stated objective was based on a review of authoritative sources in management. The intent was to establish, from authorities on the subject, a selection of management decision criteria that could be applied in the analysis of proposed logistics system changes to assure valid and predictable results consistent with the stated objectives and principles of the LOGPLAN.

The particular methodology adopted included a review of the various viewpoints of contemporary management literature, formulation of managerial decision criteria from these viewpoints, and an application of the criteria to recent logistics system decisions by the LSPC. This approach addressed each of the research questions and permitted bridging management theory by the use of managerial decision criteria to the practice of decision-making and taking. This methodology is illustrated in Figure 1 and shows: (A) the viewpoints examined as inputs for the managerial decision criteria, (B) the filtering, rearranging and selection of criteria, (C) the DOD LOGPLAN Process inputs which are the objectives, principles, and task group studies against which the criteria were analyzed and finally, (D) the flow of a proposed change and the application of managerial decision criteria by the LSPC and its staff groups.

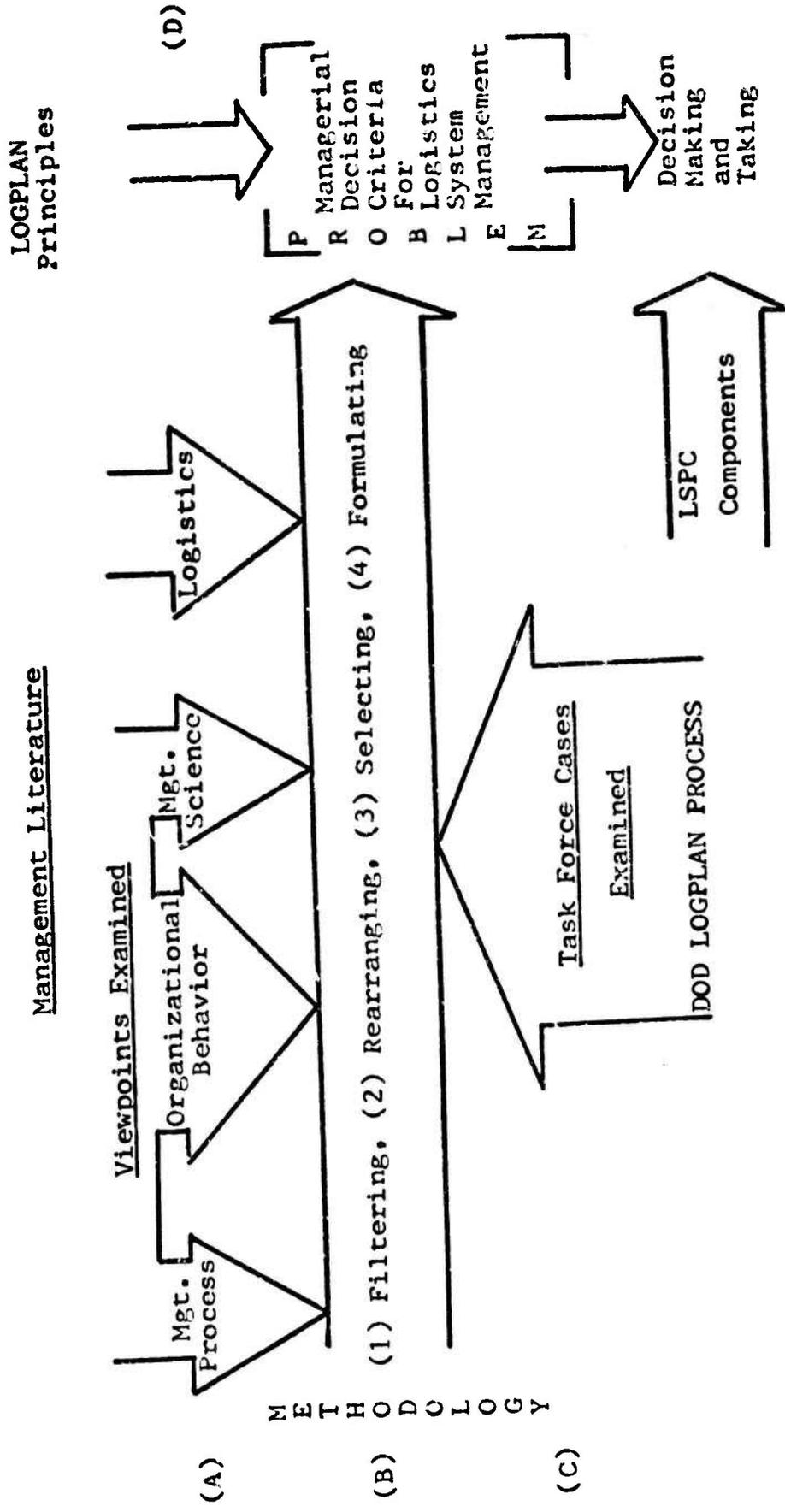


Fig. 1.--Methodology and Problem

Organization

Chapter II provides additional background on the evolution of the LOGPLAN. This review of the logistics system planning gap and related conditions and events was included due to the limited information published to date on the history of the LOGPLAN. The published LOGPLAN was less than a year old at this writing.

Chapter III develops the managerial decision criteria that the thesis team felt could strengthen the application of logistics principles in systems planning. Chapter IV provides an analysis of the criteria usefulness based on a trial application and analysis conducted by the thesis team on two LSPC Task Group Studies. Finally, Chapter V presents the findings, conclusions, and recommendations.

CHAPTER II

EVOLUTION OF THE DOD LOGPLAN PROCESS

Long-range planning has been an important part of National Security affairs in the area of defense weapons programming and strategic objectives planning. Business and governmental enterprises have also recognized the need for formalizing long-range planning.¹ Clearly long-range planning was not a new idea, but its use in logistics systems development to build a comprehensive plan applicable to all service components was only announced as a DOD policy in March 1970.² The background to this announcement demonstrates the evolutionary path which produced the DOD LOGPLAN.

Logistics Systems Planning Gap

Defense planners and logistics managers have long recognized the need for joint logistics operations and system planning. Logistics experience gained in World War II particularly supported joint logistics planning. For example,

¹George A. Steiner, Managerial Long-Range Planning (New York: McGraw-Hill Book Company, 1963), p. 1.

²U.S. Department of Defense, DOD Logistics System Planning, DOD Directive 5126.43 (Washington, D.C.: Government Printing Office, 26 March 1970).

Admiral E. J. King, USN, and General George C. Marshall, USA, issued the first joint logistics directive in 1943, titled: "Basic Logistical Plan for Command Areas Involving Joint Army and Navy Operations."³ However, logistics system development and related planning processes had remained a piecemeal operation within each service since the establishment of the Department of the Defense in 1947. Joint service task forces, study groups, and projects had only been used when directed by DOD.⁴ The service components retained their independent logistics system planning approaches. A master plan or blueprint for logistics system development on operations within the defense community remained to be achieved.

A logistics systems planning gap particularly becomes apparent when logistics systems planning is contrasted to the major achievements in overall defense planning. Long-range planning of weapons systems development, force levels, and budgets were widely adopted in the 1960's. The Five Year Defense Program (FYDP) and the Joint Strategic Objectives Plan (JSOP) are two examples of the DOD-wide planning documents that had no logistics parallel in the Department of Defense. No blueprint for future logistics systems to support the FYDP or JSOP was available, except as fragmented planning elements of the service components' logistics

³George Carrol Dryer, Naval Logistics (2nd ed., Annapolis, Md.: U.S. Naval Institute, 1962) p. 166.

⁴Elmer D. Howk, Blueprint of Defense Logistics in the Future (Washington, D.C.: ICAF, Thesis No. 81, 30 March 1965), p. 2.

systems.⁵

The lack of a comprehensive plan to guide DOD logistics system development had not been unnoticed by Congressional members or Defense managers. Their voices of concern were critical of the lack of standardization among the services and the gap that existed between major defense planning (i.e., FYDP, JSOP) and the separate logistics system planning by each service component. The long history of logistics systems independence sustained a planning gap. The gap was particularly noticeable in the policy, procedural, technical, and functional aspects inherent in logistics system development.⁶ No overall framework was available to the service components to even demonstrate initiatives to interface, standardize, or integrate logistics operations and systems.

Trends and Events

Early impetus for DOD logistics system planning naturally followed the DOD-wide success with both long and short-range planning achievements with the force programs and budget documents (i.e., FYDP, JSOP) introduced in the 1960's. The FYDP contained a major program entitled Central Supply and Maintenance, and the JSOP included a Logistics Annex. However, these logistics elements did not address the operating logistics systems or define system objectives; these

⁵Robert A. Wells, RAMMS Revisited: A Current Look at the Continuing Need for a DOD Materiel Management System Blueprint (Washington, D.C.: ICAF, Thesis No. 175, 31 March 1965), p. 1.

⁶Ibid., p. 12.

documents particularly lacked the technical design requirements needed for DOD-wide logistics system planning.⁷ Their emphasis was on end-use requirements like maintenance expenditures, war reserve stocks, and facilities, not on the nature of the logistics systems needed to support programmed forces.

Phased improvements of logistics systems existed only in the services or agency level. Their major characteristics were the uniqueness in how the plans were constructed, how automatic data processing (ADP) was implemented, and how their independence of design made it almost impossible to aggregate the plans into a single DOD logistics system plan.⁸

Congressional criticism, GAO reports, and the increased logistics role of unified commanders all induced DOD to focus more on logistics systems planning. Additionally, the technology used in new strategic weapons and the computer applications available to manage logistics tasks facilitated and demanded long-range logistics systems planning. These trends produced studies within OSD that could serve as forerunners to the LOGPLAN.⁹ Three studies noted in the LOGPLAN Profile (Task Group 1-70) were the Defense Material Management Improvement Program (1961), the Responsive Auto Material Management System (later called RAMMS-62), and the Progressive Refinement of Integrated Supply Management

⁷U.S. Department of Defense, LOGPLAN Profile (available from the Office of the Assistant Secretary of Defense (I&L), unpublished, Washington, D.C., June 1971), p. i-1.

⁸Ibid., p. I-2.

⁹Ibid.

(1965). These provided a foundation for the Department of Defense to develop its Logistics Systems Blueprint Concept Papers presented in August 1969.¹⁰ These papers served as the necessary management catalyst to the establishment of the LSPC.

Three specific events led to the development of the first DOD LOGPLAN: (1) a top-level conference of DOD civilian and military logisticians at Airlie House (Warrenton, Virginia), October 1969, (2) DOD's decision to establish a Logistics Systems Policy Committee (LSPC), and (3) the issuance of Task Order 1-70 by the LSPC in April 1970.¹¹ The Airlie House conference was held to discuss the Blueprint Concept Papers. Instead, the conferees devoted most of their attention to the more basic questions of "whether there was a need for a logistics systems plan, and if so, what should be the 'mechanism' by which it would be created and maintained."¹² Result of this conference was an agreement that: (1) there was a need for a DOD Logistics System Plan, (2) a top-level Logistics Systems Policy Committee should guide its development, and (3) more definition was needed on how the committee should operate.¹³ The second event, establishment

¹⁰ Logistics Systems Blueprint Concept Papers were a collection of 17 position papers prepared by the ASD (I&L) staff, providing proposals on the need for a five-year DOD-wide logistics systems improvement plan and stressed compatibility, interface, and for integration of automated supply functions and processes. (Found in LOGPLAN Profile)

¹¹ Ibid., p. 1-3.

¹² Ibid.

¹³ Ibid.

of the LSPC, was soon implemented after the Airlie House discussions by DOD Directive, "DOD Logistics Systems Planning" on 26 March 1970.¹⁴

The third event resulted from the LSPC's initial action in issuing Task Order 1-70. The Task Order requested the Air Force to chair a joint working group to undertake two related efforts:

- Development of a profile description of the emerging logistics system for the 1975-1980 time frame.
- Development of a planning mechanism for the LOGPLAN.

Task Group 1-70 completed its final draft of a LOGPLAN profile in June 1971. The LSPC and DOD approved and published the first LOGPLAN on 17 May 1972.

First DOD Comprehensive Logistics System Plan

The publication of the DOD LOGPLAN marked the opening of a new frontier in DOD Logistics Systems planning. A definitive look at its scope and purpose is pertinent to the research questions in this thesis.

The original DOD directive establishing LSPC listed the characteristics that the LOGPLAN was to have.¹⁵

- Provide a continuing approach to Logistics Systems development.
- Communicate joint understanding of DOD Logistics Systems objectives.
- Promote optimum interchange of systems design knowledge and techniques at all levels of DOD.

¹⁴U.S. Department of Defense, DOD Logistics System Planning, DOD Directive 5726.43 (Washington, D.C.: Government Printing Office, 26 March 1970).

¹⁵Ibid.

- Assume the highest practical level of systems compatibility, interface, standardization, and integration consistent with DOD requirements and mission needs of the separate DOD components.

The LOGPLAN was to become the master plan for DOD Logistics Systems; it included a documented collection of logistics concepts (assumptions and principles), objectives, and subordinate plans for each component and agency.

This thesis started at this point to examine the inherent problem of policy application in the logistics systems planning. Highly characterized by change, conflict of interests, military risk, and uncertainty, the LOGPLAN presents a continuing and special challenge to the student of logistics.

CHAPTER III

DEVELOPMENT OF MANAGERIAL DECISION CRITERIA

Introduction

Two complementary sources have been used to develop managerial decision criteria in support of the LOGPLAN process. Management and logistics literature have served as these rational sources in this study.

This chapter addressed the selection of management characteristics and their authority, identified their contributions to logistics management and developed a set of managerial decision criteria. The efforts centered on a search of management literature and the formulation of criteria statements. The singular goal was the construction of an explicit managerial decision framework for handling change proposals to the LOGPLAN. The central research proposition was that definitive managerial decision criteria to support the LOGPLAN's principles could be developed from management literature and the logistics environment.

Selected Streams of Management Thought

An extensive review of management literature was made to identify the mainstreams of management thought. Three

management viewpoints were used in the study. These streams of management thought provided a conceptual way to group the most current and commonly accepted characteristics of management theories, concepts, and practices.

As a point of departure for the management literature review, four writers' approaches to management literature were surveyed. They were: (1) John F. Mee, (2) Joseph L. Massie, (3) Claude S. George, Jr., and (4) Joel E. Ross. Each writer provided an example of the variety of views and classifications present in management literature and are cited as representative of the different management views emerging today.

Mee's Approach

Mee saw management thought as evolving from several sources and viewpoints having common objectives but different approaches.¹ These approaches were:

1. The management process school which "evolved from the logical analysis of the mental processes essential in the utilization of people and facilitating resources to achieve desired results." Clear emphasis is on achievement of goals set by someone but "does not provide properly for combining the needs of individuals and the productivity and effectiveness needs of the organization."²

¹ John F. Mee, Management Thought in a Dynamic Economy (New York: New York University Press, 1963), p. 88.

² Ibid.

2. The organizational-behavior approach came from the well-known Hawthorne experiments. Mee claims this approach "can only augment the process of management" and brings "enlightenment about organizational behavior--the needs and motivations of men at work."³

3. The decision-making approach grew from the area of economics and the rational methods of establishing and choosing from among alternative courses of action. Therefore, Mee claimed decision-making could be a "central focus of management actions."⁴

4. The mathematical or quantitative-analysis approach for Mee was the view that the function of management is the "establishment of systems of mathematical models and processes that can predict the outcome of different alternative courses of actions in given situations."⁵ Here management scientists or operations research specialists are employed.

Massie's Approach

Massie concludes that development of management thought can be summarized as six principal streams. These were,⁶

- (1) managerial accounting
- (2) managerial economics
- (3) organization theory
- (4) human relations and behavioral sciences

³Ibid., p. 89.

⁴Ibid., p. 90.

⁵Ibid., p. 91.

⁶Joseph L. Massie, Essentials of Management (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964), p. 16.

- (5) quantitative (mathematics and statistics)
- (6) industrial engineering

Clearly, Massie's frame of reference was more closely related to business and government use of management thought. He groups management thought as it is frequently practiced and shows the great diversification of ideas that exists in management and among its contributors.

George's Approach

George classified managerial concepts into what he called the "emerging schools of thought."⁷ These schools were: (1) scientific management, (2) behavioral, (3) the management process, and (4) quantitative (management science-operations research).

For George the scientific management centers on "efficiency and productions," and was predominately the concepts Mee grouped with his management process school and Massie included under industrial engineering. Management process was more the organization theory classification used by Massie and included under Organizational and Behavioral grouping provided by Mee. Otherwise George's approach can be considered similar to Mee's.

Ross' Approach

Ross developed his view by classifying patterns of management thought. He concluded there "are five significant

⁷Claude S. George, Jr., The History of Management Thought (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968), p. 136.

schools of management theory: (1) behavioral, (2) empirical, (3) quantitative, (4) decision theory, and (5) management process."⁸ Only the empirical school was different from previous classifications surveyed. Ross saw the empirical school as that group of management writers who attempt to "transfer knowledge to the learner by a study of experience."⁹ It reflected the practitioners' and businessmen's views best, and was believed to be a significant parallel to the method used by logistics writers.

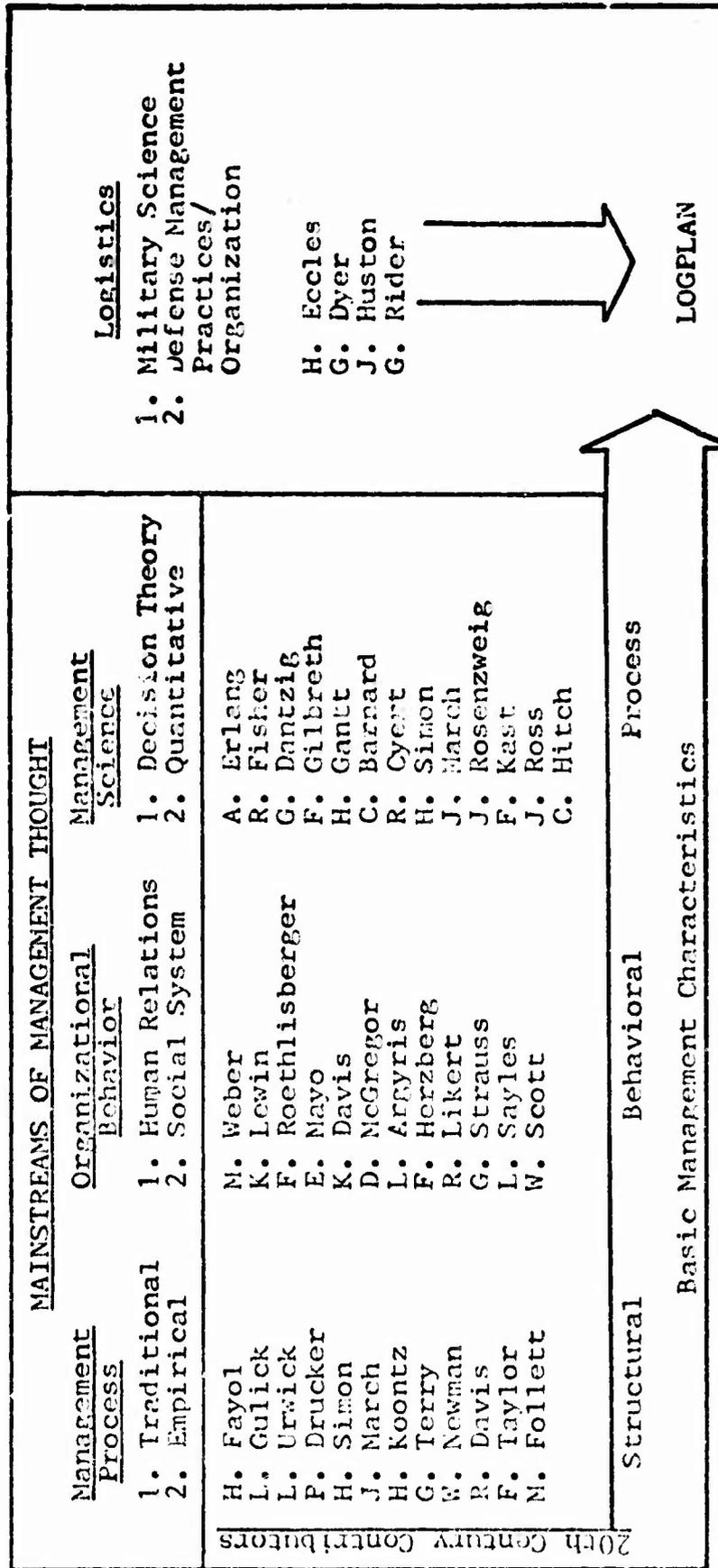
Figure 2 displays a representative group of the contributors to management and logistics thought over the years. The three management views adopted in this study more closely parallel John F. Mee's delineation of management approaches. One change made was the grouping of quantitative techniques and decision-making theories under the view labelled management science. Harvey M. Wagner's Principles of Management Science serves as a practical illustration of this approach.¹⁰

Many more authorities and classifications of management are available than were selected for representation in Figure 2; however, the classification of management theories, concepts, and practices was not considered a central issue in the study; only the applied contributions from management literature were important. This was accomplished by selecting

⁸ Joel E. Ross, Management by Information System (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 43.

⁹ Ibid.

¹⁰ Harvey M. Wagner, Principles of Management Science (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970).



Note: Evolutionary nature of management was depicted here by providing a historical listing of representative contributors, not all directly used in the thesis but their impact on management thought and logistics was relevant. Many of the above contributors' works are overlapping.

Fig. 2.--Rational Sources of Managerial Decision Criteria for Logistics Systems Management

those management characteristics believed most relevant to the circumstances found in the LOGPLAN and the related decision-making environment. Figure 2 also shows the conceptual influence of management literature on logistics and its writers which will be discussed later in this chapter.

Contributions to Managerial Decision Criteria

Each stream of management thought has contributed basic management characteristics that are important legacies to modern managers. Here were identified the basic characteristics that appear to shape organizations, managers, and their behavior in decision-making, particularly as related to logistics system management.

The study viewed the decisions in logistics system planning, as related to the LOGPLAN, to be the necessary result of a well defined sequence of behavior. Both the LSPC and its support groups (Task Forces, Secretariat, etc.) need a framework to judge and to construct system changes to the DOD logistics systems. E. P. Learned and A. T. Sproat provided a feasible approach to link management characteristics to the three management views presented by Figure 2.¹¹ These are shown as (1) structural, (2) behavioral, and (3) process groupings of management literature contributions.¹² These groupings of management characteristics were assumed basic to any managerial decision criteria framework and served as a

¹¹Edmund P. Learned and Audrey T. Sproat, Organization Theory and Policy (Homewood, Ill.: Richard D. Irwin, Inc., 1966), p. 2.

¹²Ibid., p. 7.

means to organize the managerial decision criteria that follows.

The Structural Group

The structural group of management characteristics are those which generally include the traditional management concepts and principles. Luther Gulick's principles like "span of control," "unity of command," and "division of labor" suggest the organizational rubrics provided by the structural group which were inherently seen to form a substantial basis for managerial decision criteria.¹³ The structural group commonly included the fundamental functions of management.

Four managerial decision criteria statements resulted from consideration of the structural dimensions found in organization and systems management. The formulation of these four criteria was due simply to their explicit impact on the resource elements in logistics system planning. George R. Terry provided the pervasive question that applies: "Where should action take place and who should do what work?"¹⁴ Here the impact of the structural characteristics was defined as managerial decision criteria to support the first LOGPLAN principle. The criteria are now presented and discussed.

Maintains only essential organization differentiation.--Differentiation was defined as

the state of segmentation of the organizational system into subsystems, each of which tends to develop particular attitudes in relation to the requirements posed by

¹³Ibid.

¹⁴George R. Terry, Principles of Management (Homewood, Ill.: Richard D. Irwin, Inc., 1968), p. 130.

its relevant external environment.¹⁵

Logistics systems planning particularly faces the issue of systems segmentation. It entails decisions about organizing by functions, customer, product, and region and flow of work, communications, and control. Many additional management characteristics can be identified to shape the essential differentiation level. The central issue in resource allocation area was--has the degree of differentiation been achieved by the logistics systems configuration to produce the efficiency and level of effectiveness sought?

Both vertical and horizontal differentiation were seen essential approaches to resolving the issue.¹⁶ The vertical stresses the hierarchical roles, functions, and authority levels; the horizontal pinpoints the degree of departmentalization and systems sub-units required. Here the impact of logistics systems changes on established patterns of relationships among military service components or parts of logistics organizations must be visible, measurable, or simply judged in the change process.

The degree of differentiation necessary was seen as

. . . an optimum relationship between functions, physical factors, and personnel for each organization element, and for the organization as a whole, for a given volume of business in a given industry.¹⁷

¹⁵Fremont E. Kast and James E. Rosenzweig, Organization and Management (New York, N.Y.: McGraw-Hill Book Co., 1970), p. 178, Lawrence and Lorsch reference.

¹⁶Ibid., p. 179.

¹⁷Ralph Currier Davis, The Fundamentals of Top Management (New York: Harper & Brothers, 1951), p. 536.

These attributes of good organization equally applied to logistics systems management. Traditional differentiation frequently has been in terms of line and staff functions. Today there has been a continual "trend towards the differentiation of activities into specialized subsystems."¹⁸ Logistics systems planning decisions were seen as striving to achieve a balanced organizational structure. Hence, only essential organizational differentiation was adopted as a rule to support the resource limitation principle. This criteria was seen as a means to analyze the resource allocation factors in building and changing organizational structure. The complex and large DOD logistics systems not only require differentiation but integration to achieve systems' goals. The next structural criterion addresses this collateral characteristic.

Achieves adequate organizational integration.--Integration was ". . . achieving unity of effort among the various subsystems (units, components, and functions) in the accomplishment of the organization's task."¹⁹ A logistics system change was believed only successful if adequate intermeshing of its structural impact could be achieved. A clear basis for the coordination and interaction of a logistics system's structural parts would determine their effectiveness and cost.

¹⁸Kast and Rosenzweig, p. 187.

¹⁹Ibid.

The basic goal of the criterion is to insure adequate coordination between logistics functions, organizations, and resource allocation decisions. Determining the resources required to achieve the necessary interaction between specialized units, service components, and senior commands seems to be the central issue in applying the resource limitation principle. Does an integrated management approach assure efficiency, but more important, does it provide a sustained logistics support posture?

Two approaches to the achievement of an adequate level of organizational integration were considered. These were the primary means suggested by Joseph A. Litterer, in The Analysis of Organizations, and the matrix concept presented by Newman, Sumner, and Warren.

Litterer suggests that three different mechanisms are used to achieve coordination--an integration of organizational activities. These were through: (1) the hierarchy, (2) the administrative system, and (3) voluntary activities.²⁰ The first approach simply would link system components together by placing them under a central authority. This approach has been commonly used in DOD logistics management as integrated management gained more acceptance over the last two decades. A weakness was noted as organizations became larger. Major problems of communications up and down the hierarchy arise; layers in the organization only serve to inhibit the degree of integration. Other means to integrate the logistics systems are usually sought.

²⁰Ibid., p. 188.

The second approach was to depend on the administrative systems to handle the horizontal flow of work and routine tasks. Much of logistics remains administrative and its systems usually reflect this nature--i.e., standardized forms, procedures, and data elements--all suggest common administrative bases for coordination and communication.

The voluntary means only applies where organizational goals and objectives are widely shared by the participants. The logistics systems policy committee was seen as this kind of integrating mode. DOD logistics systems planning success remains to be determined. Were the willingness and ability of individuals or groups adequate to achieve the DOD-wide integration that the LOGPLAN objectives imply? This question only suggested the strength or limitation voluntary integration brings to the LOGPLAN.

Newman, Sumner, and Warren suggest the concept of a matrix organization.²¹ Inherent in this concept was an integrating characteristic. The concept was seen to: (1) ensure the coordinated and focused attention that was required, and (2) at the same time retain the benefits of specialized expertise that comes from highly functional departments in an organization. Here the structural form of an organization was seen as a matrix (linking units, purpose, and systems together) with the focused action dependent upon management goals and priorities. The matrix concept does vividly suggest

²¹William H. Newman, Charles E. Sumner, and E. Kirby Warren, The Process of Management (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), p. 104.

a means to coordinate and integrate logistics systems where huge, highly complex, interrelated and uncertain requirements and operations have been the history.

Resources to link, integrate, or coordinate were considered a basic structural characteristic that logistics systems planning should evaluate. Both the logistics system efficiency and effectiveness were dependent on integrating the separate functional activities inherent in military logistics and the defense management arena. Adequate organizational integration was adopted as the second criteria factor for the application model. Both the degree of differentiation and integration within the logistics systems were believed the forces that can mean conflict, increased costs, or high effectiveness if the right structural balance was achieved. Only experienced judgement can resolve and apply these complementary criteria.

Establishes clear authority, responsibility and accountability.--The organization structure resulting from the differentiation and integration decisions will also impact upon these more traditional issues. These management elements have special importance in defense management where conflict is often near or present. Clear placement of authority, responsibility, and accountability was believed to require special resource considerations. Accordingly, the above criterion statement was included in the managerial decision model built in the study.

Koontz and O'Donnell have identified the more common

factors that determine how authority is exercised or assigned.²²

These factors were:

- (1) Costliness of the Decision
- (2) Uniformity of Policy
- (3) Economic Size
- (4) History of the Enterprise
- (5) Management Philosophy
- (6) Desire for Independence
- (7) Availability of Managers
- (8) Control Techniques
- (9) Decentralized Performance
- (10) Business Dynamics (in character of the organization)
- (11) Environmental Influences

This range only suggests the complexity of the decision to place authority on a centralized or decentralized basis.

Logistics system planning cannot escape these factors.

Responsibility commonly follows authority. The acceptance of assigned duties, including delegated authority, creates an obligation for performance. Responsibility was seen by Haimann and Scott as "the obligation of a subordinate to perform the duty required by or carry out the authority granted by his superior."²³ The issue in structuring an organization seems to center around the essence of responsibility, how it flows, who remains responsible, and where in the organization is it placed. Responsibility implies the acceptance of duties or performance of tasks. Logistics management has the same requirement to insure clear definition of duties and understanding about obligations to the system,

²²Harold K ontz and Cyril O'Donnell, Principles of Management (New York, N.Y.: McGraw-Hill Book Co., 1964), p. 318.

²³Theo Haimann and William G. Scott, Management in the Modern Organization (Boston: Houghton Mifflin Co., 1970), p. 202.

service component, or DOD officials. Historical evidence has long supported the proposition that authority and responsibility should be commensurate. Logistics systems planning decisions should clearly distinguish these matters.

Accountability implies control and accuracy. It usually means in the defense arena--"to keep accurate and adequate records and to safeguard public property."²⁴ Logistics systems inherently must contribute the degree of accountability necessary to assure authority and responsibilities assigned can be efficiently and effectively exercised. Unless organizational structures are designed to clarify these issues, the behavior of personnel and the processes utilized to manage may fail. Accordingly the criterion is: Establishes clear authority, responsibility, and accountability.

Facilitates special management.--Beyond the structural characteristics already presented was the evolutionary nature of defense management. Newer, more complex defense programs and problems have produced special purpose organizations and systems. Particularly unique was the need for logistics systems planning to include the considerations shaped by defense research, weapons acquisition, and foreign military contingencies. This requirement was best illustrated by the wide use of program or project management in defense areas.

"The structuring of the organization therefore becomes a more active, continuing part of the managerial

²⁴ibid., p. 203.

process than ever before."²⁵ Logistics systems planning cannot escape this very special environment. Would the logistics system subcomponents interface, be superimposed, or even redesigned because of and as a result of project management's impact?

Primary structural approach here requires organizational modifications, emphasizing the integrative aspects, and requires the development of effective horizontal and diagonal information-decision networks.²⁶ Logistics systems planning and related system change decisions must facilitate the newer approach to organization. Resources may be additive or dispersed from the parent or older units, but their impact was seen as a significant factor for logistics systems decision makers to consider. Systems changes were believed called upon to facilitate these special management needs that were widely accepted and used in military logistics. The criterion is: Facilitates special management.

The Behavior Group

Next it was necessary to address managerial decision criteria with respect to organization behavior. Selected management contributors listed in Figure 2 were used to develop these criteria. The list was not meant to be all inclusive;

²⁵ Alan T. Goldstein, "Project Management" (unpublished paper, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, undated), p. 4.

²⁶ Fremont E. Kast and James E. Rosenzweig, Organization and Management (New York, N.Y.: McGraw-Hill Book Co., 1970), p. 195.

however, it included some of the major contributors felt to be most applicable to the DOD and separate military services.

Incorporates appropriate leadership style.--The first of these characteristics to be discussed was "Leadership Style." In Organization Theory and Policy: Notes for Analysis by Learned and Sproat, leadership style in organizations was identified as somewhat of a continuum ranging from directive to participative to laissez-faire. The scope of this discussion did not include the laissez-faire style since its impact was less relevant in the DOD. Whether or not a directive or participative style is chosen, organization behavior will be influenced in some manner. It is probably safe to say that the leadership style adopted will seldom be pure, but a point on the continuum either pro-directive or pro-participative. Since any proposed logistics system change will either become a part of an existing organization or will comprise a new organization, it is important to analyze the proposed change in view of the advantages which can be achieved from the different leadership styles. It is not our position to defend or refute either of the styles mentioned, but it is our intent to remind the analyst of the proposed change that organization behavior will be affected by the type leadership incorporated.

The style must necessarily be adapted to the situation at hand.

There is a technique for handling men. It includes the technique of order giving It includes other aspects of the leadership relations between the super-

visor and the supervised.²⁷

The Principle of Participation should be applied whenever possible. Direct orders should not be given when it is possible to get results through suggestion.²⁸

This is nothing more than the application of participative management whenever possible to achieve the desired goals.

It is also important to view the proposed change with requirements for training or retraining in human relations skills. Human relations researchers are agreed that effecting a change from one leadership style to another--as from an authoritative to a more participative type--is one of the most difficult changes an executive can be asked to make.² In view of the principle of resource limitation, required training or retraining must be considered and the time and cost of human resources taken into account.

Formal and informal organizations specifically identified and utilized for improved operations.--For purposes of illustration, a formal organization is normally depicted in some form of a diagram or organization chart. This chart is then supported by an organization manual if required. As pointed out by Harold Stieglitz of the National Industrial Conference Board,

²⁷Ralph Currier Davis, The Fundamentals of Top Management (New York: Harper and Row, Publishers, 1951), p. 717.

²⁸Ibid.

²⁹Edmond P. Learned and Audrey T. Sproat, Organization Theory and Policy (Homewood, Ill.: Richard D. Irwin, Inc., 1966, p. 65.

The organization chart of most companies shows--indeed is designed to show--just two things:

1. Division of work into components. These components may be divisions or departments or they may be individuals. Boxes on the conventional chart represent these units of work.

2. Who is (supposed to be) whose boss--the solid lines on the chart show this superior-subordinate relationship with its implied flow of delegated responsibility, authority and attendant accountability.³⁰

He also notes that all charts have one thing in common; they do not show how the organization works. How it works is frequently called the "informal organization" and in many cases is the organization which is of greater importance to the manager. It, however, is filled with many elements, some even intangible, which are impossible to chart; yet they exist and must be understood and utilized to make the best use of resources. Such elements as degree of responsibility and authority, status, communication and interpersonal relationships must be considered. When considering a proposed logistics system change, the analyst should look at the organization from an informal and a formal point of view. In this respect, he must know what each can contribute to the effectiveness of the organization and the efficient utilization of resources.

This is further emphasized by the fact that people tend to group together for security, recognition, and social benefits.

Groups may exercise far stronger control over their members than does management. Since management can achieve

³⁰ Keith Davis and William G. Scott, Human Relations and Organizational Behavior: Readings and Comments (New York: McGraw-Hill Book Company, 1969), p. 176.

its ends only through working with people, it must also work through groups.³¹

People seek membership in existing groups and form new groups for a wide variety of reasons. But at the bottom, there always seems to be a search for satisfactions that are not provided directly by the job or by the supervisor--satisfactions such as companionship and protection.³²

Informal groups have a life of their own; they have customary ways of doing things and of looking at things; they have their own leaders and a minutely defined status of hierarchy. These are the stable, enduring components of group life. In other words, informal organization is a reality that management can ignore only at its own peril.³³

Admittedly, these informal organizations may be very difficult for the analyst of a proposed logistic system change to identify; however, every effort must be made to look at and evaluate the whole organization.

Therefore, it is necessary to apply some criterion to the analysis of a proposed logistics system change with respect to formal and informal organization--that is, informal and formal organizations specifically identified and utilized to improve operations.

Achieves sound and fair labor relations.--Another characteristic upon which managerial criteria are based pertains to the Social Environment. There are many organizations which can influence a logistics system to include: other government agencies, suppliers, customers, community groups, labor unions and nationality, regionality, and

³¹George Strauss and Leonard R. Sayles, Personnel: The Human Problems of Management (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), p. 70.

³²Ibid., p. 88.

³³Ibid.

cultural groupings. Within the social environment category labor unions and cultural relations will be used to develop managerial decision criteria. This is not to say that the other social organizations should be ignored; rather, it is in an attempt to address two of the common organizations frequently encountered in the DOD world-wide logistics system.

Labor unions have experienced a slow start in DOD due primarily to the limitations the government has stipulated with regards to the right to strike. The unions have, however, made considerable advances in achieving improved employee working conditions and have served to give the employee a voice with management. In view of these facts, organized labor, and thus labor relations, has become an area where the logistics manager must focus increasing attention.

Although it is difficult to find references on labor relations which address the unique application to the military environment, some analogies can be drawn from writings on the subject in the civil community. It is a commonly accepted view that if the goals of the employee and labor are similar to the goals of management and the organization, then goal achievement is likely. This is brought out in Rensis Likert's Principle of Supportive Relationships which says:

The leadership and other processes of the organization must be such as to ensure a maximum probability that in all interactions and in all relationships within the organization, each member, in the light of his background, values, desires, and expectations, will view the experience as supportive and one which builds and maintains his sense of personal worth and importance.³⁴

³⁴R. Likert, New Patterns of Management (New York: McGraw-Hill Book Company, 1961), p. 103.

R. C. Davis in The Fundamentals of Top Management refers to a continuous identification of interests in his discussion of union management relations and says: "an identification of personal objectives with organizational service objectives is a necessary part of the process of integrating interests." Continuous identification is the development and maintenance of "focal points" for common interests which serve to provide for a maximum of common interests between service objectives and personal objectives.

With these views in mind, and realizing the limited bargaining power afforded the union due to government restrictions, it is important for the analyst to be aware of the conditions which can provide good labor relations in any proposed logistics system change. This is not to say that good labor relations must be achieved at any expense; however, good relations would tend to reduce grievances, sick leaves, work slow downs, and the effects of these practices on any organization. The effect of good relations would serve to support the best use of manpower and thus support the principle of limited resources. The managerial decision criterion applied by the analyst when considering a proposed logistics system change should then be: Achieves sound and fair labor relations.

Maintains or achieves compatibility within the Cultural Environment.--The second area within the social environment to be discussed is that of Cultural Relations. This particular element, or organization, within an organization

was selected since it is an area likely to be overlooked, yet an area which can be very problem provoking in a system as world-wide as DOD logistics.

Regardless of their inherited talents at the time of birth, people are conditioned by the culture in which they live as they gradually mature. Because of the cultural conditioning of people, organizations in different nations and cultural areas are required to adapt somewhat to these differences in order to secure cooperation and motivation. The organization's mission is to maintain its technical efficiency while still meeting the different cultural needs of its participants.³⁵

At first glance, the problem may seem to be non-existent or trivial at best; however, it is real and can create serious and critical problems if neglected. Can you visualize the problems associated with a new logistics system implementation in a foreign nation which is a continuous operation with no consideration being given to the two-hour noon break taken by all indigenous labor who will operate the system?

With the DOD logistic system operating throughout Asia, Europe, the Mid and Far East, and the differences in religion, beliefs, customs, and practices--and even the regional differences found in CONUS--it is important for the proposed logistics system change to be viewed with these cultural aspects in mind. We do not propose, in most instances, the necessity for specific design fabrication for each different location; rather, it would be more feasible to design flexibility into the system and make known the modifications necessary for different world-wide points of implementation.

³⁵Keith Davis and William G. Scott, Human Relations and Organizational Behavior: Readings and Comments (New York: McGraw-Hill Book Company, 1969), p. 228.

The use of local indigenous labor has proven economical and in the best interest of the conservation of one of our most precious limited resources, our manpower. Therefore, a managerial decision criterion to be used by the analyst when considering a proposed logistics system change is: Maintains or achieves compatibility within the cultural environment.

Incorporates the applicable and feasible organization behavior model.--Organization behavior is a reflection of human behavior and how the human resources collectively perceive and react to the organization.

Organizational effectiveness with employees is a continuing task for all organizations, regardless of their type, cultural environment, or size. Human effectiveness is also desirable to help the organization achieve technical and economic efficiency which will serve customer and general social needs.³⁶

Keith Davis in his book Human Relations at Work: The Dynamics of Organizational Behavior presents four organizational behavior models: (a) Autocratic, (b) Custodial, (c) Supportive, and (d) Collegial. The models are best understood by referring to Figure 3 extracted from his book.³⁷ The applicability of these models when analyzing a proposed logistics system change lies in the return to be gained in human resource effectiveness and efficiency depending on which model is incorporated in a proposed change. It is impossible to say which model is best because each has its advantages

³⁶ Ibid., p. 29.

³⁷ Keith Davis, Human Relations at Work: The Dynamics of Organizational Behavior (New York: McGraw-Hill Book Company, 1967), p. 480.

	Autocratic	Custodial (Maintenance)	Supportive (Motivation, I)	Collegial
Depends on:		Economic	Leadership	Mutual
Managerial	Power	Resources	Support	Contribution
Orientation:	Authority	Material	Performance	Integration
Employee Orientation:	Obedience	Rewards	Higher-order	Responsibility
Employee Psychological Result:	Personal	Security	Participation	Self-discipline
Employee Needs Met:	Dependency	Organizational	Higher-order	Self-realization
	Subsistence	Dependency	Motivation	Commitment to
Morale Measure:	Compliance	Maintenance		Task and Team
Relation to		Satisfaction		
Other Ideas				
McGregor's Theories:	Theory X		Theory Y	
Maslow's Need-		Safety and	Middle-order	Higher-order
Priority Model:	Physiological	Security	Motivational	Motivational
Herzberg's Factors:	Maintenance	Maintenance		
W. H. Whyte's Thesis:		Organization Man		
Blake and Mouton's	9,1	3,5	6,6	8,8
Managerial Grid:				
Motivational	Extrinsic	Extrinsic	Intrinsic	Intrinsic
Environment:	Negative	Mostly Neutral	Positive	Positive
Motivational style:	Autocratic	on Job	Participative	
Managerial Power				
Style:				

Fig. 3.--Theories of organizational behavior related to other popular ideas on the subject
Source: Keith Davis, Human Relations at Work: The Dynamics of Organizational Behavior
(New York: McGraw-Hill Book Company, 1967), p. 480.

and disadvantages, its applicability or non-applicability. It is also more likely to find a proposed logistics system which would function better by incorporating a combination or blend of two or more of the models. Therefore, the proposed change must be viewed as to what type or types of organization are needed.

One further aspect of the analysis lies in the area of compatibility of the desired model for a proposed system change with the organization model already in existence. In other words, will the desired model interface with the current operational system, and if not, can the current system be altered and is this a feasible approach? These are questions the analyst must ask when considering a proposed logistics system change to assure that the best use of our limited human resources are realized by the selection of the most applicable and feasible organization behavior model. The managerial decision criterion pertaining to Organization Behavior is: Incorporates the applicable and feasible organization behavior model.

Incorporates motivating and satisfying techniques where applicable and feasible.--Addressing organization from the individual's goals, we now consider motivation and job satisfaction of the individual as influences on the success of an organization. As a departure point we submit that a motivated and satisfied employee is more productive than one who is not. The major arguments which develop in this area are: What Motivates?, What Satisfies? It is easy to quote

authors whose contention is that job specialization, repetitiveness, and the lack of individuality creates on-the-job boredom and, therefore, dissatisfaction on the part of employees, thus lowering the effectiveness and efficiency of an organization.

Management pays a price for the work simplification, routinization, and ease of supervision inherent in mass-production work. The cost is largely in terms of apathy and boredom as positive satisfactions are engineered out of jobs. . . . It is hardly surprising that there is frequently little pride in work or identification with the job. . . . Lacking satisfaction and identification, they also can develop a variety of aggressive and hostile patterns.³⁸

Others contend that specialization and repetitiveness is what the employee perceives and not what the observer would perceive. This point would be difficult to refute; however, the real challenge would appear to be in developing satisfying and motivating jobs where this is possible. Where impossible, one answer to the problem of job dissatisfaction would be a sincere effort in vocational counseling, scientific personnel selection and placement, and personnel development. Rensis Likert's principle of supportive relationships would find wide application here. The change must be analyzed with the man and his environment and expectations clearly in view. Motivating and satisfying techniques for the individual can provide rewards in efficiency and effectiveness that cannot be achieved otherwise. Many times it is easier to change the job than to change the person.³⁹ The logistics system analyst

³⁸George Strauss and Leonard R. Sayles, Personnel: The Human Problems of Management (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), p. 37.

³⁹Ibid., p. 344.

must at least consider these factors and be knowledgeable of the gains possible in effectiveness and efficiency when dealing with our limited human resources. A criterion which supports Motivation and Job Satisfaction is: Incorporates motivating and job satisfying techniques where applicable and feasible.

The Process Group

The managerial decision criteria already developed have stressed the organizing and leading dimensions of management. Those management characteristics that actuate or control organizations are addressed here as the process group.

A process was seen as "a series of actions that lead to the accomplishment of objectives."⁴⁰ In logistics system planning two subgroups of processes seem necessary.⁴¹ The first group considered was the selected managerial processes: (1) communicating, (2) controlling, and (3) decision-making. The second group presented the logistics functions which were the inherent processes the LOGPLAN encompasses. These processes underlie and shape both the structure and behavior of DOD logistics systems. Criteria statements relative to both common managerial and logistics processes served to complete the framework for the application of the resource limitation

⁴⁰William H. Newman, Charles E. Sumner, and E. Kirby Warren, The Process of Management (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), p. 11.

⁴¹Edmund P. Learned and Audrey T. Sproat, Organization Theory and Policy (Homewood, Ill.: Richard D. Irwin, Inc., 1966), p. 76.

limitation principle. Each process criterion and its rationale follows.

Achieves the necessary communicating activity.--Both the form and the means of communicating were seen as the essential elements faced in logistics systems management. A necessary communicating activity needed to be explicitly established prior to decisions on systems design. However, communicating was considered only a lubricant in any logistics system to foster smooth operations and results, not an end.⁴²

An infinite range of communicating activity seems to result from the social and technological nature of the logistics community. In this study communicating has been narrowed to its impact on resources. The threefold nature of this criterion included:

1. The personal and group channels for communicating activity--like formal-informal, vertical-horizontal, and line-staff characteristics.
2. The technical communication network so basic to logistics management.
3. The special information feedback and control characteristics commonly emphasized in logistics systems.

These communicating dimensions consumed resources and demanded careful consideration whenever logistics system planning was encountered. William G. Scott has suggested questions that point toward the resource implications of communicating activities. These were:⁴³

⁴²George R. Terry, Principles of Management (Homewood, Ill.: Richard D. Irwin, Inc., 1968), p. 473.

⁴³William G. Scott, "Organization Theory: An Overview and an Appraisal," The Journal of the Academy of Management, April 1961, cited by Learned and Sproat, Organization Theory and Policy, p. 82.

1. How are communication centers connected and how are they maintained?
2. What is the structure of the feedback system?
3. What information is stored in the organization and at what points?
4. How accessible is this information to decision-making centers?
5. How conscious is the organization of the operation of its own parts?

Logistics systems planning fully entailed answering these questions and equating the answers to resources and logistics systems outputs.

Logistics systems have become dependent on communications networks. Computers, telecommunications, and people have been the central operating nodes of these networks, with software forming the bond that results in the DOD logistics management information systems. Such networks consume resources directly dependent on their capability and requirement to: (1) Collect/Record Data, (2) Store Data, (3) Process Data, (4) Retrieve Data, and (5) Transmit Data.⁴⁴ Logistics systems planning was seen as predominantly addressing the network nodes, their interface, and standardized forms. Costs incurred depend on the use of data and need-orientation placed on the systems. No communicating activity was believed a truly free commodity.

Clearly communicating activity would vary with each system change. However, a prevailing nature of communications was observed. It seems effective communicating activity tends

⁴⁴Department of Defense, ASD (I&L), LOGPLAN Profile (unpublished DOD Draft, Washington, D.C., June 1971), p. E-4.

to integrate processes, logistics functions, organizational levels, and cement ties between decentralized organizations.⁴⁵ Essential to any integrating characteristic of communicating was the feedback element. Does the communicating activity provide an information feedback system that measures change in output to input and allows exercise of controls? Logistics systems have established this managerial process goal: performance measurement.

The necessary communicating activity always remains in the end a judgemental decision by managers. The criteria statement could only serve to explicitly stress the resources needed to achieve the communicating activity essential to support other managerial and logistics processes. The criterion is: Achieves the necessary communicating activity.

Assures adequate controlling.--Controlling has many connotations: to curb or restrain, to direct or command, and to check or verify have been three common meanings. Controlling could be seen as directing resource allocation as well as restraining the use of resources. Logistics system changes could not escape this process and may have resulted from controlling itself.

Budgetary, planning, programming, quality control, and management all have controlling objectives. Adequate controlling was used to mean "maintains organization activity within allowable limits as measured from expectations which

⁴⁵ Joel E. Ross, Management by Information System (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 244.

may be implicit or explicit in terms of stated objectives, plans, procedures, or rules and regulations."⁴⁶ This managerial process provided the framework to formulate a managerial decision criterion which asks: Has adequate control been provided? and at what cost?

All control systems could be generalized to include these descriptive elements: (1) a measurable characteristic, (2) a sensor device, (3) a comparator, and (4) an effector.⁴⁷ Logistics systems planning and operations were believed feasible for judgment on each element. A cost-benefit analysis on these elements would aid the planning process as well as the decision process. In all cases an appropriate balance between resources utilized to control and the benefits of control would be an application of the resource limitation principle.

Central issues that logistics systems planners face on controlling can be summarized as--what, where, when, who, and how. Could logistics management accept controlling by the principle of exception or would all goals, outputs, and inputs warrant inclusion in the controlling system component? Can activity beyond the means of quantity, quality, time used, or costs be controlled? These issues warranted resolution if a logistics systems controlling phase was to be judged adequate or inadequate. The interrelatedness of communicating and decision-making processes further complicated

⁴⁶Fremont E. Kast and James E. Rosenzweig, Organization and Management (New York: McGraw-Hill Book Company, 1970), p. 468.

⁴⁷Ibid., p. 470.

the controlling activity before planners and decision-makers. For the basic purpose here, the criterion is: Assures adequate controlling.

Allows multiple decision-making points.--Decision-making was observed to commonly address the process of deciding, settling, or resolving management issues. The communicating and controlling processes primarily have been structured for the present to serve decision-making. Decision-making in logistics system management was considered no exception to this view.

Inherently, the logistics systems policy council (LSPC) was established to make decisions. This group would center on strategy matters in the area of organization and logistics systems. Few computational techniques could be applied here. Problem solving in these almost institutional and organization subsystems involves what might be called "mediation and compromise."⁴⁸ Political, military, and philosophical considerations always have been present. Behavioral aspects of the participants further complicated the decision-making process.

A broad open-system framework seems most appropriate for the decision-making process needed for DOD logistics systems management. A coalition of opinions, votes, and participants' interests seems to be the decision process adopted today.⁴⁹

⁴⁸Ibid., p. 403.

⁴⁹Department of Defense, ASD (I&L), DOD Logistics Systems Planning (Washington, D.C.: Government Printing Office, 1970).

Multiple decision-making points seem essential to operating large, complex systems. This criterion was adopted since "it is impossible to mold all the factors which management must consider into an explicit, well-defined model which can be quantified and solved."⁵⁰ Logistics systems planning in DOD simply was concluded to be too complex and its scope so large that many decision points and authority levels were needed.

An open system of decision-making emphasized "finding satisfactory rather than optimal solutions" (systems plans) and at various levels or horizontal groupings within the logistics community.⁵¹ Surely a pluralism of personal bias, hopes, and abilities would impact the logistics systems plan. The multiple point concept strengthens the check and balance principle that groups as decision-makers demonstrate. Therefore, the resources to be employed in logistics decision-processes warrant evaluation and finally may only be judgmental. The issue the criterion brings to logistics systems planners was--could multiple groups, individuals at various levels participate in the decisions? System changes could only be achieved if the decision levels were clearly defined and respected. Also, the complex and essential interface between logistics, tactics, and strategy in military science seemingly support the multiple decision-making criterion.

⁵⁰Kast and Rosenzweig, p. 404.

⁵¹Ibid., p. 407.

Functional Processes

Logistics systems planning particularly centers on the logistics processes such as requirements determination, procurement, and distribution. These elements of logistics management were considered the basic processes inherently to be shaped by the LOGPLAN. All logistics systems planning decisions were believed to entail these processes. So, criteria statements to guide their decision environment, and specifically the necessary resource allocation required, made these functional processes an important part of the managerial decision criteria interests in the study.

Maintains viable requirements entry points into the system.--Requirements mean the logistics outputs needed to support sustained combat operations and readiness postures required by broad national policy. Logistics system planning must consider the multi-entry characteristic needed to allow the many combat units, service component offices, and joint service agencies and the project management environment to enter their logistics support needs into the logistics system. What resource is needed to achieve or maintain the flow of materiel and personnel requirements information in a logistics system? The influence of planning levels in defense, the endless range of items, and the many situations that combat may dictate all supported the consideration of these decision factors. H. E. Eccles called them the requirements and capabilities planning factor process.⁵²

⁵²Henry E. Eccles, Logistics in the National Defense (Harrisburg, Penna.: The Stockpole Company, 1959), p. 67.

Allows for sound procurement practices.--Procurement connotes two meanings: (1) the acquisition process for weapons buys, and (2) the procurement of secondary items and general material support needs. Logistics system planning scope was limited here to the latter procurement purpose. Weapons acquisition was excluded since it represents fairly large, separately managed procurement process outside the direct scope of the LOGPLAN.

Decisions about logistics system design can impact procurement practices if time, cost, and manpower skills to perform trade-off-analysis, like use of Economic Order Quantities (EOQ), have been inadequately considered. Does the system change minimize the costs of procurement? Sound procurement practices will insure:

. . . the planning for and control of the pre-purchasing functions of developing new sources of supply, maintaining appropriate relationships with existing sources, and requesting bids or prices. It includes the purchasing functions of buying in terms of quality, quantity, price, source, and time, as well as analyses and decisions regarding those criteria. It includes the post-purchasing functions of follow-up, expediting, and recording, and reporting data.⁵³

Logistics system planning and design changes were considered dependent upon meeting the procurement mechanism to achieve this functional process. Their resource implications were believed significant.

Supports desired distribution processes.--Distribution encompasses those sub-processes (supply, transportation, and

⁵³Graham W. Rider and Lonnie I. Ostrom, "A Military Logistics Concept Applied" (unpublished and undated paper, School of Systems and Logistics, Air Force Institute of Technology, Wright-Patterson AFB, Ohio), p. 15.

maintenance) necessary in making a logistics need known and in moving the material or service from source to use. Logistics system planning cannot escape this multi-functional process; it is the most pervasive logistic area. Distribution includes the backward flow of material returns and excess utilization. Distribution is a closed-loop process which requires responsive system characteristics.

The characteristics of supply, transportation, and maintenance are well demonstrated in the following definitive statements:⁵⁴

Supply. It includes the tasks of: warehousing--the assembly, storage, and distribution of goods, both outgoing and incoming; inventory control--the planning for and control of the magnitude and costs of stocks, sometimes called stores, of incoming and outgoing goods; order processing--the activities involved in receiving an order from a customer and servicing it; disposal--the disposal of excess and surplus goods through destruction, salvage, redistribution, or sale to other government agencies or private concerns; services--the administration of housing, messing, clothing, and equipping of personnel.

Transportation. Management of the transportation of incoming and outgoing goods including the movement of goods on both organizationally owned and purchased (carrier) equipment. It includes the planning for and control of movement and service; cost; schedule; records; and price.

Maintenance. The servicing, repairing, modifying, or altering of goods. It includes preventive maintenance actions and inspections. Maintenance also involves the rehabilitating aspects of salvage or reclamation of goods.

Logistics system planning decisions rightfully must consider these sub-processes and assure adequate information and manpower resources to achieve their purpose. Distribution tasks also well demonstrated the mixed and dependent interface

⁵⁴Ibid., p. 16.

between the logistics functions and their sub-processes and tasks. All system alternatives were seen as a mix of these very varied characteristics and the decision criteria an expression that purposeful study of the underlying elements was essential.

Military Logistics Contribution

Management concepts, military science, and logistics today are interrelated. The managing environment of military logistics demands the fullest understanding and utilization of management literature. It is here where management and organizational thought are applied to guide logistics systems planning.

Henry E. Eccles described the linkage between management literature and logistics from the perspective of military command some years ago as:

Logistics can well be called military economics, and yet logistics and economics are not synonymous. Logistics uses many of the principles of management and yet management and logistics are not synonymous. The relation between logistics, management, and command can be expressed in a single sentence. Logistics is a function of command, whereas management is one of the tools used by command to perform its logistics function. Thus, logistics is not wholly economics, nor is it wholly management as these subjects are understood in the academic and business worlds. Instead, logistics blends both of these subjects with special elements of military command, military decision, military criteria, and military value. In this blend very special problems arise from political factors, from the need for an authoritarian approach, and from sheer size.⁵⁵

As suggested by Eccles' observation, the managerial decision criteria developed in this study was seen as the product of

⁵⁵Henry E. Eccles, Military Concepts and Philosophy (New Brunswick, N.J.: Rutgers University Press, 1965), p. 70.

management authorities over the years and the lessons learned in military logistics. Sound military logistics has become increasingly dependent on management concepts due to its size and complexity. Military logistics has become a specialized kind of business administration. The customary practices of the past have emerged into "systemized," "standardized," and "integrated" logistics organization fully linked to and dependent upon the technology and modern systems management theories of today.

These views shaped the managerial decision criteria model constructed in this study. Defense management and its concepts of effectiveness and efficiency have been the primary military logistics impact on the application model used in Chapter IV. Both concepts have been used to guide the application of the "Resource Limitation" principle in the study. Their use was assumed essential for the managerial decision criteria to be applied in the decision process. Efficiency and effectiveness concepts provided the basis for judging (both quantitative and qualitative) logistics systems matters.

Two principles of logistics proposed by James A. Huston serve to demonstrate the pragmatic purposes that underlie the concepts of effectiveness and efficiency in logistics management. These were: (1) "the first with the most," and (2) "economy."⁵⁶

The former principle suggested an effectiveness meaning--"to deliver adequate potential or actual fire power or

⁵⁶James A. Huston, The Sinews of War: Army Logistics 1775-1953 (Washington, D.C.: Office of the Chief of Military History, United States Army, 1966), p. 655.

shock to the critical places at the critical times for achievement of tactical and strategic objectives."⁵⁷

Economy was used to indicate cost centered judgements about logistics means. Huston illustrated the economy principle by relating "primary requirements (those needed for direct support of tactical units) and secondary requirements (those necessary for support of the means used to meet the primary requirement) on a partial basis."⁵⁸ The most efficient logistics decision was, other things being equal, the one in which the ratio of secondary to primary requirements was the lowest. This approach clearly related input to output on a cost or logistics consumption basis to fire power sustained.

Effectiveness and efficiency have served as the decision junctures--being two separate but related components of a military logistics judgement. Additionally, these judgements were usually made about common logistics variables like (1) men, (2) material, (3) money, and (4) time.⁵⁹ Logistics system planning was believed facilitated by building managerial decision criteria which could be applied through effectiveness and efficiency concepts and common logistics variables. In Chapter IV this framework will be fully demonstrated.

Robert N. Anthony's definitions have been selected to serve as the effectiveness and efficiency concepts employed

⁵⁷ Ibid.

⁵⁸ Ibid., p. 658.

⁵⁹ Henry E. Eccles, Logistics in the National Defense (Harrisburg, Penna.: Stockpole Company, 1959), p. 41.

in the study. These are:⁶⁰

Effectiveness--"How well the manager does his job, the extent to which he produces the intended or expected result."

Efficiency--the amount of output per unit of input. (Costs adopted as the unit in this study.)

Clearly, these definitions stressed inputs and outputs, facilitated use of costs as an efficiency measure and allowed some contribution to some organizational goal to be considered effectiveness. The managerial decision model constructed included these concepts as measurements of the more conventional logistics systems variables (men, material, money, and time). The criteria provided the framework for decision-making. Together these fundamental elements formed a basis for a managerial decision matrix as shown in Figure 4.

⁶⁰Robert N. Anthony, Managerial Accounting Principles (Homewood, Ill.: Richard D. Irwin, Inc., 1970), p. 323.

MANAGERIAL DECISION CRITERIA	Efficiency of Resource Use				Effectiveness
	Men	Money	Material	Time	
<u>STRUCTURAL GROUP</u> 1. Maintains only essential organizational differentiation 2. Achieves adequate organizational integration 3. Clear authority, responsibility, and accountability results 4. Facilitates special management					
<u>BEHAVIORAL GROUP</u> 1. Applicable management style adopted 2. Formal and informal organization considerations 3. Achieves sound labor relation practices 4. Maintains compatibility in cultural environment 5. Incorporates the applicable and feasible organizational behavior model 6. Achieves means of motivation and of satisfaction					
<u>PROCESS GROUP</u> <u>Administrative Subgroup</u> 1. Achieves the necessary communicating activity 2. Assures adequate controlling 3. Allows multiple decision-making points <u>Functional Subgroup</u> 4. Maintains viable requirements entry points into the system 5. Allows for sound procurement practices 6. Supports desired distribution process					

Fig. 4.--Managerial Decision Matrix

CHAPTER IV

APPLICATION AND ANALYSIS

Introduction

In this chapter the managerial decision criteria have been applied, analyzed, and appraised as to their suitability. The chapter includes: (1) a discussion of application techniques adopted, (2) demonstration of the managerial decision criteria applied to selected task group studies, and (3) related analysis. Here the criteria were validated in the context of the LOGPLAN process.

The Application Approach

A shortcoming of the LOGPLAN was the lack of managerial decision criteria which task groups, service components, and the LSFC could apply to facilitate the recommendation of, or selection of, an alternative. The criteria against which such alternatives would be measured must be broad based and apply to current and projected LOGPLAN changes or studies. A rigorous appraisal of the criteria developed in Chapter III was needed to determine if they could meet this need.

The approach adopted was to compare alternative courses of action against the managerial decision criteria for purposes of selecting a recommended action--making a decision! Generally apparent from the task group reports was the underlying principle that the acid test of any alternative's value rested on whether or not it fulfilled the task group's charter. The managerial decision criteria was believed to help select the alternatives to meet this test, but there was envisioned cases where the task group charter (goals) may not be substantiated by the managerial decision criteria. The criteria in these cases might demonstrate that the LSPC's objectives, goals, and task group charters warrant change. This issue was beyond the scope of the thesis, but is a basic and important issue in DOD logistics systems management. The application technique used was a matrix-profile, constructed to analyze the application of the managerial decision criteria to the selected task group reports.

The criteria were listed in a tabular form, and a symbol indicating the thesis team's evaluation of how the criteria were considered for efficient use of the critical resources of men, money, materiel, and time was made. If the task group survey indicated that the particular managerial decision criterion was considered in the formulation of recommended alternatives, a plus sign (+) was placed at the intersection of the criterion and the resource. If it could not be determined whether the applicable criterion was considered, a zero (0) was placed in the intersection. In cases where the task group discussion indicated an inconsistency or

violation of the criterion, a minus sign (-) was placed in the appropriate square of the matrix. If the criterion was not discussed, and was clearly not applicable in the task group study being surveyed, an asterisk (*) was the symbol awarded. This process was repeated for all combinations of task group reports and managerial decision criteria. From the resulting matrix it was possible to determine if the task groups were considering those criteria which have been determined to be of paramount importance by management authorities in their literature.

The management decision criteria was developed to address both effectiveness and efficiency. Effectiveness has previously been defined as "How well the manager does his job--the extent to which he produces the expected or intended result."¹ For effectiveness to be measured accurately, however, one must first have an accurate measure of the output of a system. The outputs of the services and components within DOD do not generally lend themselves to accurate measurement. There have been several studies made in an effort to develop definitive output measures applicable to the DOD environment.* Even those factors of output familiar to most DOD managers, such as NORS (Not Operationally Ready-Supply), NORM (Not Operationally Ready-Maintenance), MMH/FH (Maintenance Manhours/Flying Hours), Fill Rate, etc., can be

¹Robert N. Anthony, Management Accounting Principles (Homewood, Ill.: Richard D. Irwin, Inc., 1970), p. 323.

*RAND Report, R-439-PR, System Analysis and Policy Planning: Applications in Defense, ed. by E. S. Quade and W. I. Boucher, June 1968, contains some excellent discussions concerning the character and difficulties of measuring effectiveness.

computed in several different ways. There is not yet a standard and accepted method for these common measures DOD-wide, and commonality in this area may well be worth some intensified study. It was not the team's intention to explore this area--pressing as it may be--but it was mentioned to illustrate the difficulty in adequately addressing the subject of effectiveness by a task group.

Since it is so difficult to measure the impact of proposed LOGPLAN changes for effectiveness, the proposals can only be evaluated qualitatively--the measure being whether or not the proposal under consideration will accomplish the desired result. There is an implied reference to effectiveness by the task groups, but rarely are there explicit references to the system changes' effectiveness. One must question an assumption whether alternatives under serious consideration by a task group would have already been screened for effectiveness. Hopefully, those proposals which did not meet the test of effectiveness would have been discarded before reaching the stage of serious consideration. This reasoning is supported by an excerpt from a discussion of alternatives by Task Group 2-71, where they state:

In order to explore the organization . . . which will function most effectively, several organizational alternatives have been developed. Although many alternatives were considered by the Task Group during preliminary analysis, only those alternatives considered viable are discussed in the following paragraphs.²

²Report on DOD Personal Property Disposal Organization, Col. D. L. Sallee, chairman (Washington, D.C.: Government Printing Office, October 1971), p. 35.

Therefore, unless specified otherwise, proposed alternatives generally are being evaluated by a task group primarily on their merits of efficiency. For this reason, the symbols used to validate whether the task groups discussed effectiveness as a factor in selection of a recommended alternative has been simplified in format. A plus (+) is awarded if effectiveness is discussed by the task group, and a zero (0) if effectiveness is not discussed--but the alternative is considered on its merits as a viable alternative.

Application Results

There have been sixteen task groups chartered by the LSPC to investigate, evaluate, and make recommendations on proposed changes to and within the DOD LOGPLAN environment (see Appendix B). Of the six completed task group studies, two were selected for purposes of evaluating the managerial decision criteria developed by the authors.* These selected task group reports were evaluated to determine if the basic management characteristics used to develop the criteria had been considered during the decision-making phase of task group activity.

Figures 5 and 6 provide the matrix displays of the authors' judgment on how the managerial decision criteria and the two task group reports are aligned. This application of the criteria was difficult, but supported the view that

*Time constraints limited the number of reports which could be analyzed. Since the two reports selected represent opposite ends of the logistic spectrum (acquisition and property disposal), it was felt that the range of the selected reports would provide a valid test of the criteria.

MANAGERIAL DECISION CRITERIA	Efficient Use of Resources				Effectiveness
	Men	Money	Material	Time	
<u>STRUCTURAL GROUP</u>					
1. Maintains only essential organizational differentiation	+	+	+	0	+
2. Achieves adequate organizational integration	+	+	+	0	
3. Clear authority, responsibility and accountability results	+	+	+	+	
4. Facilitates special management	0	0	0	0	
<u>BEHAVIORAL GROUP</u>					
1. Applicable management style adopted	0	0	0	0	0
2. Formal and informal organization considerations	+ / 0	+ / 0	+ / 0	+ / 0	
3. Achieve sound labor relation practices	0	0	0	0	
4. Maintains compatibility in cultural environment	*	*	*	*	
5. Incorporates the applicable and feasible organizational behavior model	0	0	0	0	
6. Achieves means of motivation and of satisfaction	0	0	0	0	
<u>PROCESS GROUP</u>					
<u>Administrative Subgroup</u>					
1. Achieves necessary communicating requirements	-	0	-	-	
2. Assures adequate controlling	+	+	+	+	
3. Allows multiple decision-making points	-	-	-	-	
<u>Functional Subgroup</u>					
4. Maintains viable requirements entry points into the system	-	-	-	-	+
5. Allows for sound procurement practices	+	+	+	+	
6. Supports desired distribution process	+	+	+	+	

Fig. 5.--Matrix of Task Group 6-70 (Communications Material Study Group: A Plan for Integrated Management of FSG 58) and Managerial Decision Criteria

MANAGERIAL DECISION CRITERIA	Efficient Use of Resources				Effectiveness
	Men	Money	Material	Time	
<u>STRUCTURAL GROUP</u>					
1. Maintains only essential organizational differentiation	0	0	0	0	
2. Achieves adequate organizational integration	+	+	+	0	+
3. Clear authority, responsibility and accountability results	+	+	+	*	
4. Facilitates special management	0	0	0	0	
<u>BEHAVIORAL GROUP</u>					
1. Applicable management style adopted	0	0	0	*	
2. Formal and informal organization considerations	+ / 0	+ / 0	*	*	
3. Achieve sound labor relation practices	+	+	*	*	
4. Maintains compatibility in cultural environment	+	+	0	*	0
5. Incorporates the applicable and feasible organizational behavior model	0	0	0	*	
6. Achieves means of motivation and of satisfaction	+	+	0	*	
<u>PROCESS GROUP</u>					
<u>Administrative Subgroup</u>					
1. Achieves necessary communicating requirements	+	+	+	+	
2. Assures adequate controlling	+	+	+	+	
3. Allows multiple decision-making points	-	-	-	-	
<u>Functional Subgroup</u>					
4. Maintains viable requirements entry points into the system	+	+	+	0	+
5. Allows for sound procurement practices	*	*	*	*	
6. Supports desired distribution process	+	+	+	+	

Fig. 6.--Matrix of Task Group 2-71 (DOD Personal Property Disposal Organization) and Managerial Decision Criteria

the task group's consideration of alternatives would be strengthened if a set of criteria would be explicitly established prior to a selection or decision phase. The detailed analysis that follows provides the limitations to the criteria as well as that found in the task groups' recommended changes to logistics systems.

Analysis

Discussion and justification of the symbol awarded in each and every intersection in the matrices of managerial decision criteria and task group (TG) reports would be tedious, repetitious, and unnecessary. A general discussion of the managerial decision criteria groups and task reports was deemed sufficient to display the reasoning and thought processes used to derive the symbols. However, so that the reader is not forced to accept the matrix construction on the sole basis of faith, Appendix B was developed to designate the source pages of the task group report used to justify the team's judgment as to the appropriate symbol to be awarded within the matrix. The task group reports generally were several hundred pages in length. Rather than attempt to identify every textual reference that might have applicability to the managerial decision criteria, the most germane ones were selected for inclusion in the appendix. This procedure is justified in that the important fact is that the task group used a criterion in its decision making process--not necessarily how the criterion was used or how often it was used.

Structural Group

The structural group of managerial decision criteria was discussed at length by TG 6-70 (Communications Materiel Study) and TG 2-71 (DOD Personal Property Disposal Organization). TG 6-70 was unique in its approach and attitude with respect to the pros and cons of the study subject, in that they professed a "devil's advocate" approach of "show me" in their efforts to obtain the most reliable assessment possible.³

A thorough discussion of the impact of structural aspects should be expected, since reorganization of portions of the DOD logistics environment was the basic reason for the formation of the task groups. As an example, the report submitted by TG 6-70 contained an entire chapter devoted to a discussion and analysis of the aspects of Integrated Materiel Management. In it, questions were asked such as: (1) What is integrated materiel management? (2) What are the results of integrated materiel management? and (3) What are the benefits/disadvantages of integrated materiel management? Discussion of benefits covered aspects such as utilization of assets, procurement, storage and transportation, and effects on management resources utilization. The discussion of disadvantages presented aspects of command control and accountability, weapon system vs. commodity management, technical

³Report of the Communications Materiel Study Group: A Plan for Integrated Management of FSG 58 (Communications Equipment) and FSC 6625 (Electrical/Electronic Test Instruments, Vol. 1--Analysis, L. K. Noseman II, chairman (Washington, D.C.: Government Printing Office, November, 1970), p. 5.

data and engineering design control interfaces, delays in supply support for new items, and the military service organizational adjustments associated with integrated management.

TG 6-70 recognized that

The disadvantages associated with integrated materiel management are more difficult to quantify because they primarily exist in the areas of coordination and communication responsibility and authority. . . the critical factor related to the feasibility and desirability of integrating any logistics process is the degree of control which the military commander considers that he must exercise over the execution of that process.⁴

This was coupled with the observation that an integrated manager is not under the command and control of the military service or other operational commander and ". . . there is sometimes a tendency for integrated managers to be less responsive to requests for exception procedures, extra attention to special projects or unusual situations. . . ." ⁵

These structural deficiencies were determined to be outweighed, however, by benefits derived through increased utilization of materiel assets brought about by existence of a broader demand base for projecting requirements, the pooling of assets for lower inventory investment, and higher materiel availability. Other benefits forwarded for integrated management were: (1) the single face to industry, (2) consolidation of management effort, and (3) the need for few procurement actions which would allow larger procurement quantities.⁶ The benefits resulting from integrated management

⁴Ibid., p. 29.

⁵Ibid., p. 30.

⁶Ibid., pp. 22-23.

were deemed to be quantifiable and annual savings of from \$6.7 million to \$11.1 million were estimated to accrue if integrated management of Communication's Equipment (FSG 58) and Electrical/Electronic Test Instruments (FSC 6625) would be instituted.⁷

Organizational structure was also one of the primary concerns of Task Group 2-71. There were detailed discussions of the background and development of Personal Property Disposal Organizations (PDOs) in the continental United States (CONUS) and of the Atlantic and Pacific overseas operations. TG 2-71, however, did not address the subject of possible advantages of decentralized operations, and instead concentrated the main thrust of its emphasis in the area of expected benefits to be derived through integrated management of Property Disposal (PD) activities.

TG 2-71 voiced its concern over authority and responsibility relationships quite frequently. One of their conclusions concerning overseas operations was that

There is duplication of the headquarters structures for exercising staff supervision over disposal activities within both EUCOM and PACOM; further, there is a duplication in the manpower allocated to staff supervision over these activities in EUCOM. Only establishment of a single manager for disposal within a theater could effectively eliminate these conditions.⁸

Again, the benefits of integrated management were deemed to be quantifiable, and it was estimated that a proposal to integrate the CONUS PD program would result in

⁷Ibid., p. 330.

⁸Report on DOD Personal Property Disposal, p. 35.

savings of 509 personnel positions, representing \$3.67 million annually. A similar overseas program estimate of savings was 190 personnel for \$500,000 per year.⁹

Neither of the task groups addressed the subject of facilitating special management as it was defined in the development of managerial decision criteria. TG 2-71 devoted a chapter to Special Management Areas--such as (1) the use of bidders lists throughout the DOD in disposing of surplus materiel, (2) the excess utilization program, and the proposal that responsibility for the effort be transferred from the PD office, and (3) funding and fiscal controls applicable to the DOD disposal program.¹⁰ However, these special management areas are not synonymous with special management areas as defined in Chapter III.

Behavioral Group

The behavioral group of managerial decision criteria received very little attention from the task groups except for discussion of the impact of proposed formal organizational changes upon command, control, and authority relationships.

TG 2-71 did make some observations about the utilization of local nationals in the overseas property disposal activities. It was noted that although the majority of civilian personnel employed in the PDC operations were local nationals, that it was unusual for them to occupy key positions. The result was ". . . there was a fairly standard

⁹Ibid., p. 196.

¹⁰Ibid., p. 157.

manning pattern which decreed that key/supervisory positions had to be held by American personnel--generally, although not always, departmental civilians--with little or no effort to upgrade local nationals to perform these duties."¹¹ This criticism of present practices by the task group can be construed as an implied effort to achieve a means of motivation and job satisfaction for the indigenous workers. More harmonious labor relations and compatibility in the cultural environment could be expected through providing advancement channels for the local nationals. However, it must be admitted that the references to increased use of local nationals was couched in terms of economic benefits:

. . . the Task Group felt that use of departmental civilians should be minimized in favor of local nationals where possible. This becomes particularly significant when problems of gold flow and the unfavorable balance of payments are also present.¹²

Our survey uncovered little evidence that the behavioral aspects pertaining to proposed changes were considered. In defense of the task group's seeming lack of discussion in this area, it is recognized that these are extremely difficult to measure or to even identify. A quantitative evaluation of the economic impact of dysfunctional behavioral influences is a near impossibility, and justifying a decision based on behavioral considerations to a hard-nosed DOD manager is more difficult still. It is our contention, however, that optimum effectiveness or efficiency cannot be achieved

¹¹ Ibid., p. 109.

¹² Ibid., p. 109.

unless behavioral aspects are given their proper consideration. Kast and Rosenzweig had the following comments on motivation and productivity:

Managers are interested in efficient utilization of resources in achieving objectives. Human capability is a critical resource, one which is extremely variable. In fact, latent human capability may very well be the greatest untapped resource. If so, we need to understand the individual behavior as it relates to the work situation.¹³

Process Group

It was apparent that the task groups gave considerable thought to the factors included in the process group category. Once again, this may be attributed to the directions given in the task group charters, which emphasized investigation into the feasibility of reorganization/realignment of tasks within the DOD logistics environment.

Administrative Subgroup

Both task groups addressed in detail the considerations included in the administrative subgroup. Again, the studies tended to emphasize the benefits expected to accrue from the economies of scale resulting from integrated management. However, TG 6-70, with their avowed "devil's advocate" approach, did present and consider benefits of decentralized management practices. One such area was in the communicating requirements where it was noted that,

The shorter and less formal lines of communications that prevail in the military ICP environment permit more

¹³ Fremont E. Kast and James E. Rosenzweig, Organization and Management: A System Approach (McGraw-Hill Book Company, 1970), pp. 220-221.

responsive reaction to program changes in terms of modifying or depressing replenishment requirements projections. The availability of this data places the military service ICP at an advantage over an integrated manager.¹⁴

TG 6-70 addressed the area of controlling (as it applied to the relationship between an item manager for repair parts and the manager of a maintenance function which repairs the related item) thusly,

. . . as an ideal arrangement, the two should be as closely related as possible; i.e., reporting to the same manager. The qualification that "given a requirement to produce a result, the manager must retain either direct or indirect control over the tasks necessary to produce the result" necessitates that the result, i.e., the responsibility, of the manager be identified as a first order requirement.¹⁵

TG 2-71 was also concerned with the communicating/controlling process of a proposed system change. A proposed addition of 185 field activities under the operational control of DSA was deemed to require an organizational change, "since 190 activities reporting to a single headquarters for operating guidance, personnel support, and field assistance seems to be excessive, there is a need for some intermediate level of management."¹⁶ Communication of policy is considered a necessary facet of the controlling process; therefore, adequate controlling requires effective communication processes. TG 2-71 expressed their views on this subject as,

The smaller the number of echelons through which policy must be communicated, the faster policy can be transmitted, the fewer the number of people who would get

¹⁴A Plan for Integrated Management, p. 5.

¹⁵Ibid., p. 256.

¹⁶Report on DOD Personal Property Disposal, p. 36.

involved in interpretation and analysis, and the fewer the number of implementing directives would be published.¹⁷

This concept, while considered efficient in transmission of policy, has the adverse effect of not allowing any discretionary latitude at the working levels, and proscribes the possibility of intermediate decision making points.

Functional Subgroup

The functional subgroup of the process group was thoroughly considered during the decision making processes of the task groups. The effects of the proposed restructuring with the attendant functional relationships changes on organizational effectiveness and efficiency were prime considerations during the evaluation of alternatives.

The authors determined that TG 2-71 was not involved in procurement practices, per se. Obtaining surplus properties was not construed to be a procurement function, since the task group itself stated that the disposal process was severable from other logistics functions and did not commence until accountability for property which was declared excess by competent authority was transferred to a Property Disposal Office.¹⁸ Concern over maintaining proper entry of materials into the system was displayed by their investigation into the procedures for reclamation of contractor excesses and civil works property.¹⁹ Of course, attaining an optimum

¹⁷ Ibid., p. 44.

¹⁸ Ibid., p. 52.

¹⁹ Ibid., pp. 196-197.

distribution (in this case it might more properly be labeled redistribution) was the intention of the group as expressed in the original charter.

The prime interest of TG 6-70 was at the opposite end of the logistics spectrum, in that their charter directed them to develop recommendations for the optimum management alignment of a procurement process for FSG 58 and FSC 6625. The managerial decision criteria contained in the functional subgrouping was a constant consideration throughout the study. One area of perceived inconsistency in their approach has already been noted and has applicability to the criterion of maintaining viable requirements entry points into the system. This area was in the use of program data information and the admitted fact that a decentralized management system would be more responsive to program changes than integrated management could be.²⁰ The task group viewed the liability of integrated management in this area as an obstacle to be overcome through implementation of alternative procedures.

²⁰A Plan for Integrated Management, pp. 156-157.

CHAPTER V

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Overview

This chapter enumerates the findings, conclusions, and recommendations reached in the writing of this thesis. Concluding thoughts center around the answers established to the research questions and the recommendations that could strengthen DOD logistics systems planning. The LOGPLAN's future was seen as a continuing challenge to logistics managers.

Before describing what were the results of the research effort, there are several conditions that need to be considered. First, management literature was found to be highly diffused--with many views, established principles, and accepted managerial characteristics which are widely used in practice. This study was not exhaustive, but more an introductory approach to using management literature as a data source in a research environment. Secondly, although a continuous and conscientious attempt to remain purely objective, some assumptions and judgements probably occurred which have reflected the authors' bias. To the authors these assumptions seemed valid and the judgements were believed reasonable.

Finally, it is concluded that a managerial decision framework can be developed, tested, and adopted to strengthen the LOGPLAN--particularly its decision-making mechanisms and groups (i.e., LSFC, task groups, and services). The model, hopefully, can serve to be suggestive of a sound approach. Judgement will always remain the final behavioral characteristic in any enterprise like the LOGPLAN.

Findings

Research Question One:

Determine the applicable management characteristics that can provide a basis for development of managerial decision criteria which can be applied in logistics systems management.

Consistently identifiable management characteristics were found in the management literature reviewed that could be used to form managerial decision criteria. There was a general consensus amongst the authorities in the management discipline that these characteristics were classifiable into, but not limited to, structural, behavioral, and process groups or views. Both the schools of management thought and Learned and Sproat's categorization of management characteristics provided an acceptable framework to build managerial decision criteria for the LOGPLAN. Managers have long been dependent upon this triad of management characteristics. Structural, behavioral, and process sides of the management triad were observed as presenting complementary, conflicting, and opposing issues to a manager. LOGPLAN decision-makers surely will face these issues when weighing alternative courses of action.

Research Question Two:

Formulate a set of managerial decision criteria for the first LOGPLAN principle (Resource Limitations) based on Management literature.

Managerial decision criteria for the first LOGPLAN principle (Resource Limitations) were developed from a broad based approach. The criteria were shaped to serve as benchmark issues that logistics managers at least needed to address in any decision process. Management literature substantiated this approach.

Figure 4 provided a summary of the criteria statements formulated and based in this study. The formulation effort included a framework to exercise judgment on the pervasive concerns of managers--effectiveness and efficiency. Logistics management seems to be adaptable to an input and output concept as a measurement (judgment points) approach to determine the value or adequacy of a LOGPLAN change. Input measurements could be described as efficiency, inefficiency, or at some point between the worst and best inputs. Logistics system outputs remain the central and ultimate interests of military logistics operations. The managerial decision criteria developed and their framework served best to focus an issue, and even though its resolution remains problematic, at least it is clarified. No explicit output measurements (effectiveness) were demonstrated in the two task group reports analyzed. Effectiveness measures remain to be better developed and understood.

Research Question Three:

Determine the adequacy of the managerial decision criteria as an aid to policy application in the logistics systems planning environment of the Department of Defense.

The adequacy of the managerial decision criteria developed in this thesis was only partially satisfied. Only past LOGPLAN task group reports were used and available within the time parameter for this project. The criteria statements and their framework warrant use during an actual task group study phase and the LSPC decision-making situation. Hopefully, the application of LOGPLAN's principles could be strengthened and more explicitly analyzed by adoption of the criteria.

The authors strongly believe the approach taken in the study can be the basis for building managerial application rules (as R. C. Davis would see them) to guide participants at all levels in the LOGPLAN process. The structural, behavioral, and process needs of sound logistics management would be indeed facilitated. Present lack of managerial decision criteria in the LOGPLAN leads the authors to believe the criteria developed could contribute to improve logistics systems management within the Department of Defense.

Conclusions

Analysis of the matrices of managerial decision criteria and task group studies revealed fairly consistent patterns of emphasis during the task group's decision-making phases. This may be partially attributed to the task group charters, which direct investigation into the feasibility of

increased integrated management efforts in the areas specified by the charters. Throughout the task group reports, the emphasis was on the benefits expected to accrue from increased use of integrated management techniques. Primary justification for recommendations toward integrated management rested upon the results of quantitative studies in which manpower savings were realized through contraction of "overhead" being used in the present systems. Thus, LSPC decisions seem strongly oriented toward, in fact emphasize, efficiency in logistics systems management while assuming either no change or some unmeasured improvement in effectiveness.

Structural Considerations

The structural group of managerial decision criteria received adequate attention from the task groups surveyed. Primary emphasis was in the area of functional and structural relationships effected by the proposed LOGPLAN changes under consideration. Expected benefits from integrated management were thoroughly considered and usually supported by quantitative studies. It is natural to expect that the structural aspects of proposed LOGPLAN changes would receive the most attention from a task group, as these aspects are the more traditional considerations and the ones that managers are more familiar with. Structural considerations are also the ones most amenable to quantitative interpretation, since it is possible to place a cost figure on the numbers of personnel affected by a proposed reorganization. Thus, the efficiency of a proposed system may possibly be measured. Less

likely to be addressed, though, is the effectiveness of the resulting organization, since effectiveness is less susceptible to measurement. A restructuring of the decision process in this area might be called for. An appropriate procedure might be to look at an alternative from an effective-cost viewpoint rather than one which is cost-effective. In other words--it is necessary to first define the level of effectiveness required, then seek the least costly way of achieving the desired level of effectiveness.

Behavioral Considerations

The behavioral group of managerial decision criteria received scant attention from the task groups except in the area of formal organization considerations. It is generally recognized in management literature that the effects of behavioral considerations upon the efficiency and effectiveness of an organization are difficult to measure. It is also generally acknowledged that an appropriate style of management for one organization may be completely inappropriate for another organization possessing different goals. Emerging schools of thought in behavioral studies emphasize the thought that differing styles of management and leadership may be appropriate within different organizational contexts. As such, if effectiveness and/or efficiency are to be maintained within the DOD LOGPLAN environment, it is imperative that attempts be made to evaluate the ramifications of proposed LOGPLAN changes within the purview of the behavioral aspects of the organizations involved.

Process Considerations

The process group was generally well considered during the decision-making phase of task group activities. One area not well addressed by either task group, however, was that of allowing multiple decision-making points within the proposed change. The one report that did discuss this aspect of administrative process addressed it from the viewpoint that a strong central organization would discourage interpretation of directives by middle managers. It is difficult to visualize how removal of the prerogatives available to middle management to structure an organization to fit specific needs can be regarded as an advantage of a proposed system. An organization may be adequately controlled without unduly restricting the decision parameters available to lower level managers.

Recommendations

The recommendations presented fall into two categories. The first of these are general in nature and were drawn directly from the thesis conclusions. The second category consists of recommendations which call for future study in related areas.

General

1. It is recommended that a set of managerial decision criteria be included as part of the LOGPLAN process to insure a more systematic analysis is conducted of proposed LOGPLAN changes.

2. It is further recommended that the managerial decision criteria developed by this thesis effort in support of the principle of resource limitation be adopted as part of the LOGPLAN process.

Future Study

Recommendations in this area include:

1. Additional study is required to better define effectiveness for purposes of the LOGPLAN process and to develop a systematic approach in determining the effectiveness of proposed LOGPLAN changes.
2. The managerial decision criteria drawn from the behavioral group characteristics requires further study to expand the use of criteria drawn from this relatively new approach to management.
3. Further study is also needed to investigate the full impact of the process group and the characteristics and criteria drawn from this group.
4. Since this study addressed only the principle of resource limitation, further study is necessary to determine if these criteria fit the needs of all the principles or if the criteria need be expanded or tailored to specific principles.

APPENDIX A

LOGISTICS PRINCIPLES

PRINCIPLES

A list of logistics Principles is included in the LOGPLAN to serve as a foundation for proposed improvements. The logistics Principles represent fundamental logistics truths and deal with such matters as organizational relationships, roles and missions, and accepted management practices.

P-1 THE PRINCIPLE OF LOGISTICS RESOURCE LIMITATIONS

TOTAL DEFENSE LOGISTICS RESOURCES ARE LIMITED IN RELATION TO THE TOTAL DEFENSE DEMAND. THIS RESULTS IN COMPETITION BETWEEN AND WITHIN PROGRAM ELEMENTS AND BETWEEN THEIR REQUIRING ACTIVITIES FOR AVAILABLE RESOURCES.

P-2 THE PRINCIPLE OF VARIABLE LOGISTICS SUPPORT

THE VARIABLE MISSION IMPORTANCE AND URGENCY OF NEED OF SUPPORTED FORCES, TOGETHER WITH ECONOMIC AND OTHER CONSTRAINTS, DICTATES A DOD LOGISTICS SYSTEMS CAPABILITY FOR VARYING THE QUALITY AND QUANTITY OF LOGISTICS SUPPORT.

P-3 THE PRINCIPLE OF TACTICAL RELATIONSHIP

WHEN A TACTICAL MILITARY CAPABILITY IS SIGNIFICANTLY RELATED TO A LOGISTICS SYSTEMS ELEMENT OR FUNCTION, THEN TACTICAL DECISIONS WILL DICTATE LOGISTICS DECISIONS; AND, LOGISTICS DECISIONS WILL DICTATE TACTICAL DECISIONS.

P-4 THE PRINCIPLE OF TECHNICAL INTEGRITY

THE MILITARY DEPARTMENTS OR OTHER DOD COMPONENTS RESPONSIBLE FOR THE CREATION AND MAINTENANCE OF A MILITARY CAPABILITY MUST RETAIN THE AUTHORITY TO DETERMINE THE TECHNICAL ELEMENT OF THAT CAPABILITY.

P-5 THE PRINCIPLE OF LOGISTICS SYSTEMS DESIGN

LOGISTICS SYSTEMS MUST BE DESIGNED TO MAKE MAXIMUM USE OF AVAILABLE DEFENSE RESOURCES, AND TO APPLY THE TECHNIQUES OF STANDARDIZATION, UNIFORMITY, OR INTEGRATION WHEN SUCH APPLICATION IS COST EFFECTIVE AND WILL NOT DEGRADE MISSION CAPABILITY.

APPENDIX B

JUSTIFICATION MATRICES FOR TASK GROUPS

MANAGERIAL DECISION CRITERIA	Efficient Use of Resources				Effectiveness
	Men	Money	Material	Time	
<u>STRUCTURAL GROUP</u>					N/D
1. Maintains only essential organizational differentiation				pp. 29-32, Integrated Materiel Management	
2. Achieves adequate organizational integration				pp. 21-29, Integrated Materiel Management	
3. Clear authority, responsibility and accountability results				pp. 29-32, Integrated Materiel Management	
4. Facilitates special management				N/C	N/D
<u>BEHAVIORAL GROUP</u>					
1. Applicable management style adopted				N/C	
2. Formal and informal organization considerations				Informal N/C	
3. Achieves sound labor relation practices				N/C	
4. Maintains compatibility in cultural environment				N/C	
5. Incorporates the applicable and feasible organizational behavior model				N/C	
6. Achieves means of motivation and of satisfaction				N/C	

Key: N/C = Not Considered

N/D = Not Discussed

(Continued)

MANAGERIAL DECISION CRITERIA	Efficient Use of Resources				R/F Cost Vol/Per
	Man	Money	Material	Time	
PROCESS GROUP					
<u>Administrative Subgroups</u>					
1. Achieves necessary communicating requirements					R/D
2. Assures adequate controlling				pp. 156-157, Integrated Management Methodology	
3. Allows multiple decision-making points				p. 256, Analysis N/C	
<u>Functional Subgroups</u>					
4. Maintains viable requirements entry points into the system					R/D
5. Allows for sound procurement practices				pp. 156-157, Program Data	
6. Supports desired distribution process				pp. 159-160, p. 243 Coordinated Procurement pp. 157-158 Distribution Patterns Dry Pipelines	

Keys: N/C = Not Considered

N/D = Not Discussed

JUSTIFICATION MATRIX FOR TASK GROUP 6-70

Report on Communications Materiel Study Groups: A Plan for Integrated Management of FSC 53 (Communications Equipment) and FSC 6625 (Electrical/Electronic Test Instruments)

MANAGERIAL DECISION CRITERIA	Efficient Use of Resources				Effectiveness
	Man	Money	Material	Time	
<u>STRUCTURAL GROUP</u> 1. Maintains only essential organizational differentiation 2. Achieves adequate organizational integration 3. Clear authority, responsibility and accountability results 4. Facilitates special management			N/C		pp. 49-50
<u>BEHAVIORAL GROUP</u> 1. Applicable management style adopted 2. Formal and informal organization considerations 3. Achieves sound labor relation practices 4. Maintains compatibility in cultural environment 5. Incorporates the applicable and feasible organizational behavior model 6. Achieves means of motivation and of satisfaction			N/C		N/D

Key: N/C = Not Considered
 N/D = Not Discussed

(Continued)

MANAGERIAL DECISION CRITERIA	Efficient Use of Resources				Effectiveness	
	Men	Money	Material	Time		
PROCESS GROUP						
<u>Administrative Subgroup</u>						
1. Achieves necessary communicating requirements					N/D	
2. Assures adequate controlling						
3. Allows multiple decision-making points						
<u>Functional Subgroup</u>						
4. Maintains viable requirements entry points into the system						
5. Allows for sound procurement practices				N/C		
6. Supports desired distribution process						

Key: N/C = Not Considered

N/D = Not Discussed

JUSTIFICATION MATRIX FOR TASK GROUP 2-71
 Report on DOD Personal Property Disposal Organization

APPENDIX C

SUMMARIZATIONS OF TASK GROUP REPORTS

The following compendium of reports was used to evaluate the management decision criteria developed for use to apply to the principle of resource limitation. The reports are summarizations of those submitted to the LSPC by the designated Task Groups. There have been six completed task group studies submitted for LSPC consideration. They are: (1) Task Group 1-70, which formed the framework for LOGPIAN, with Col. Orville L. Smiley, USAF, as chairman of the group; (2) Task Group 2-70, headed by Col. James E. McDowell, USA, reported on Subsistence within DOD; (3) Task Group 3-70, co-chaired by Mr. Edward Cresswell and Captain A. R. Edsall, SC, USN, reported on Development of a Department of Defense Standard Method for Identifying and Describing Automated Data Systems; (4) Task Group 4-70, headed by Col. H. F. X. Hession, USAF, Air Force Data Systems Design Center, reported on Telecommunication Support within DOD; (5) Task Group 6-70, with L. K. Moseman II as chairman, conducted a DOD Communication Materiel Study Group; (6) Task Group 2-71, with Col. D. L. Sallee, USA, as Chairman, reported on DOD Personal Property Disposal Organization. All of the reports were evaluated for applicability to the goals of the thesis study. Although

all of the reports contained relevant material, the reports of Task Groups 6-70 and 2-71 were selected as representative and sufficient against which to test the management decision criteria. For the purposes of brevity, the reports have been greatly condensed, but the salient processes, considerations and recommendations of each task group have been maintained. For those who desire more extensive information on the task group reports, it is recommended that they contact LSPC Secretariat, Office of Assistant Secretary of Defense (I&L).

TASK GROUP 6-70

REPORT OF THE COMMUNICATIONS MATERIEL STUDY GROUP

Purpose

Task Group 6-70 was formed to

. . . develop recommendations for the optimum management alignment and Inventory Control Point (ICP) for Federal Supply Group (FSG) 58 (Communications, Detection and Coherent Radiation Equipment) and Federal Supply Class (FSC) 6625 (Electrical and Electronic Properties Measuring and Testing Instruments).

Specifically, the group was to determine and document present methods and systems that the Services/Agencies were using to manage these commodities; collect and analyze appropriate item management statistics, resources, and costs; develop and evaluate alternatives for management of commodities; and to recommend and justify an optimum management realignment for the designated commodities. Guidelines presented to the group stated that anticipated cutbacks in Defense operations would affect wholesale supply management and

Consolidation of wholesale supply management through extension of integrated materiel management to an

additional commonly used commodity area may be the best method to realign commodity management and permit the closing of ICPs with substantial savings on overhead costs.

For convenience in referring to FSG (Communications Equipment) and to FSC 6625 (Electrical/Electronic test instruments) items, they were referred to throughout the study as Defense Communication Materiel Study (DCMS) items.

The task group submitted its final report to the LSPC in November of 1970.

Procedure

The first activities of the task group entailed preparation of data collection systems, a review of policies and procedures pertaining to the commodities, and briefings by the major DOD services/agencies that have Item Manager (IM) responsibilities for DCMS items. Twenty-five DOD activities are registered as having IM responsibility for the commodities. Field research was conducted at the eight largest activities, which accounted for 92.5% of all DCMS items managed. The eight major ICPs were requested to submit special statistical reports and to complete an extensive questionnaire. The group also identified several questions pertaining to integrated management and the nature of the DCMS items that they felt were pertinent to the study. Answers to questions such as: "What is integrated materiel management?", "What are the benefits . . . disadvantages of integrated materiel management?", "Is integrated management, as now practiced, an appropriate and suitable management concept for the communications materiel commodity?", "If integrated management is appropriate

for FSG/58/FSC 6625, to whom should integrated management be given?", were sought by the group. The conclusions drawn from this study provide highly insightful examples of the decision making process at DOD level.

Considerations

Task Group 6-70 considered many areas in their study of integrated materiel management of FSG 58/FSC 6625 items. First consideration was directed toward integrated management itself--what is it, what results have been obtained through integrated management of other DOD commodities, how are functions for integrated managers assigned, how are items susceptible for integrated management assigned, and what are the positions of military service headquarters regarding integrated management were all questions of investigation. The organizational framework for materiel management presently used by the Army, Navy, Air Force, Marine Corps, and Defense Supply Agency was studied. A profile of materiel contained in the DCMS was compiled. This was a general description of items in FSG 58/FSC 6625 categories, with some limited comparisons, where applicable, to the Defense Electronics Supply Center managed FSG 59. Specialized characteristics, such as inventory management and procurement of DCMS consumable items, technical and engineering considerations, storage and distribution, effects on maintenance activities, and possible savings capable of realization in O & M and investment resources were thoroughly investigated.

Conclusions

The task group listed 30 conclusions reached as a result of their study. The selected conclusions presented here have particular relevance to a discussion on the principle of limited resources.

1. "Integrated Management involves the performance by a single agent of functional logistics processes which could otherwise be separately performed." The extent that specific logistics processes may be integrated is determined by mutually agreed on "principles" (i.e., the principles contained in the LOGPLAN). The range of items subject to integrated management is determined by item management coding.

2. "In general, each of the military services (with the possible exception of the Air Force) concurs in the establishment of an integrated materiel manager for FSG 58/ FSC 6625 provided existing item management coding criteria are employed to identify the items to be placed under integrated management. Each service is emphatically opposed to full-fledged integrated materiel management for end items and reparables "

3. Integrated management has both advantages and disadvantages. "In general, the advantages outweigh the advantages not only for items used by more than one service, but also for items used by only one military service when the commodity has multiservice application."

4. "The military services endorse the existing DOD item management coding criteria and have no objection to integrated management for DCMS items which qualify under the

criteria."

5. "There is significant potential for increased utilization of DOD inventories through integration of wholesale materiel management."

6. "Integration of DCMS consumable items will not require establishment of new distribution systems or consumer requisitioning channels."

7. "Establishment of an integrated manager for DCMS items will produce net savings in the warehousing and storage function."

8. "Sizeable savings in O & M personnel resources at ICPs and storage activities will be realized by the establishment of an integrated manager for DCMS consumable items. Annual dollar savings are estimated at \$6.7 million to \$11.1 million, . . ."

9. "Savings in inventory investment cannot be estimated with certainty, but indications are that there will be a modest long run inventory investment reduction."

10. "There will be one-time costs associated with the establishment of an integrated manager."

It can be seen from the above conclusions that the task group was vitally concerned with efficient use of men, money, and materiel. Time was not addressed as a resource issue; nor was effectiveness (output measurements) analyzed or evaluated.

TASK GROUP 2-71

REPORT ON DOD PERSONAL PROPERTY DISPOSAL ORGANIZATION

Purpose

The Analysis Staff of the Defense Supply Agency undertook the chairmanship of the joint service/DSA/GSA Task Group 2-71, formed to study the Department of Defense Personal Property Disposal Organization. The task order stipulated that the Study ". . . would be conducted to determine whether it is feasible and appropriate to centralize or consolidate the total utilization and disposal function within the Department of Defense." To complete this task, all organizational and functional responsibilities and policies of DOD Personal Property actions after transfer to a Property Disposal Office were investigated. The final report of the task group was submitted in October 1971.

Procedure

The first action of the task group was to obtain briefings of all elements of DOD engaged in disposal activities, i.e., each military service, the Defense Supply Agency (as DOD program administrator of property disposal activities), the Defense Contract Administration Service (as primary activity concerned with the disposition of excess contractor inventory), and the Office of the Chief of Engineers, Department of the Army, (disposal of personal property excess to the Civil Works program). Field research was then conducted at over 70 CONUS

and overseas DOD activities, covering the full spectrum of property disposal activities from the holding activities through headquarters organizations.

The task group

. . . concerned itself primarily with the organizational and working relationships among elements of the property disposal structure and the relationships between elements of that structure and organizations external to that structure.

The range of the disposal program considered for the study included: (1) The Basic Program--that portion of the effort located at DOD installations world-wide; (2) The Disposal Program for Excess Contractor Property--government owned property, still in the hands of the contractor, which is excess to the requirements of a contractor; and (3) The Disposal Program for Corps of Engineers, Civil Works Property.

Conclusions

The findings and conclusions of Task Group 2-71 were extensive and thorough. Their findings pertaining to some of the directed areas of study are as follows. The basic disposal program policy and procedures are common throughout DOD as a result of the guidance of the Defense Disposal Manual, DOD 4160.21-M. DSA has been assigned as the program administrator. The program is not integrated at the headquarters and intermediate staff level, with duplication of functions and responsibilities at these levels. The disposal program is severable (from other logistics functions) and integration is feasible. Integration under DSA Management and centralized accounting procedures for the disposal program would result

in annual savings of \$3.67 million. The task group recommended that the total CONUS disposal program be reorganized under the integrated management of DSA.

Review and analysis of the overseas disposal program revealed that no one organization had been assigned command or staff responsibility for disposal in either theater. Unnecessary backhauling and cross-hauling of excess and surplus property was attributed to uncoordinated geographical support patterns. Integration of the overseas disposal program would have advantages of a more logical arrangement of property disposal activities, and centralized accounting with integrated management would result in annual savings of \$5,000,000. The task group recommended integration of the overseas disposal program under DSA jurisdiction.

Task group findings in the areas of contractor excesses, civil works property, bidders lists, utilization screening and funding all indicated that tangible benefits could be accrued under integrated management. Recommendations were made to the appropriate authorities that action be instituted to direct the implementation of the task group recommendations.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Anthony, Robert N. Managerial Accounting Principles. Homewood, Ill.: Richard D. Irwin, Inc., 1970.
- Davis, Keith. Human Relations at Work: The Dynamics of Organizational Behavior. New York: McGraw-Hill Book Company, 1967.
- _____, and Scott, William G. Human Relations and Organizational Behavior: Readings and Comments. New York: McGraw-Hill Book Company, 1969.
- Davis, Ralph Currier. The Fundamentals of Top Management. New York: Harper and Brothers, 1951.
- Dyer, George Carrol. Naval Logistics. 8th ed. U.S. Naval Institute, Annapolis, Md., 1962.
- Eccles, Henry. Logistics in the National Defense. Harrisburg, Penna.: The Stockpole Company, 1959.
- _____. Military Concepts and Philosophy. New Brunswick, N.J.: Rutgers University Press, 1965.
- George, Claude S., Jr. The History of Management Thought. Englewood Cliffs, N.J.: Prentice-Hall Inc., 1968.
- Goldstein, Alan T. "Project Management." Unpublished paper, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, undated.
- Haimann, Theo, and Scott, William G. Management in the Modern Organization. Boston: Houghton Mifflin Co., 1970.
- Howk, Elmer D. Blueprint of Defense Logistics in the Future. Washington, D.C.: ICAF, Thesis No. 81, 30 March 1965.
- Huston, James A. The Sinews of War: Army Logistics 1775-1953. Washington, D.C.: Office of the Chief of Military History, United States Army, 1966.

- Kast, Fremont E., and Rosenzweig, James E. Organization and Management. New York: McGraw-Hill Book Co., 1970.
- Koontz, Harold, and O'Donnell, Cyril. Principles of Management. New York: McGraw-Hill Book Co., 1964.
- Learned, Edmond P., and Sproat, Audrey T. Organization Theory and Policy. Homewood, Ill.: Richard D. Irwin, Inc., 1966.
- Likert, R. New Patterns of Management. New York: McGraw-Hill Book Company, 1961.
- Massie, Joseph L. Essentials of Management. Englewood Cliffs, N.J.: Prentice-Hall Inc., 1964.
- Mee, John F. Management Thought in a Dynamic Economy. New York: New York University Press, 1963.
- Newman, William H.; Sumner, Charles E.; and Warren, E. Kirby. The Process of Management. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.
- RAND Report R-49-PR (Abridged). Systems Analysis and Policy Planning: Application in Defense. Edited by E. S. Quade and W. I. Boucher. New York: American Elsevier Publishing Co., Inc., 1968.
- Rider, Graham W., and Ostrom, Lonnie L. "A Military Logistics Concept Applied." Unpublished and undated paper, School of Systems and Logistics, Air Force Institute of Technology, Wright-Patterson AFB, Ohio.
- Ross, Joel E. Management by Information System. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970.
- Scott, William G. "Organization Theory: An Overview and an Appraisal." The Journal of the Academy of Management. April, 1961.
- Steiner, George A. Managerial Long-Range Planning. New York: McGraw-Hill Book Company, 1963.
- Strauss, George, and Sayles, Leonard R. Personnel: The Human Problems of Management. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.
- Terry, George R. Principles of Management. Homewood, Ill.: Richard D. Irwin, Inc., 1968.
- U.S. Department of Defense. Assistant Secretary for Installations and Logistics Memorandum to DOD Components on 17 May 1972 directing implementation of LOGPLAN.

- U.S. Department of Defense. DOD Logistics System Planning. DOD Directive 5726.43. Washington, D.C.: Government Printing Office, 26 March 1970.
- U.S. Department of Defense. Logistics System Plan "LOGPLAN" 1972-1980. Unnumbered DOD Logistics System Policy Committee document. Washington, D.C.: Government Printing Office, 15 May 1972.
- U.S. Department of Defense. Office of the Assistant Secretary of Defense (I&L). DOD Logistics Systems Planning. Department of Defense Directive 5126.43. Washington, D.C.: Government Printing Office, 26 March 1970.
- U.S. Department of Defense. Office of the Assistant Secretary of Defense (I&L). "LOGPLAN Profile," unpublished, Washington, D.C., June 1971.
- U.S. Department of Defense. Report of the Communications Material Study Group: A Plan for Integrated Management of FSG 58 (Communications Equipment) and FSC 6625 (Electrical/Electronic Test Instruments). Vol. I, Analysis. L. K. Moseman II, Chairman. Washington, D.C.: Government Printing Office, November, 1970.
- U.S. Department of Defense. Report on DOD Personal Property Disposal Organization. Col. D. L. Sallee, Chairman. Washington, D.C.: Government Printing Office, October, 1971.
- Wagner, Harvey M. Principles of Management Science. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970.
- Wells, Robert A. RAMMS Revisited: A Current Look at the Continuing Need for a DOD Materiel Management System Blueprint. Washington, D.C.: ICAF, Thesis No. 175, 31 March 1965.

BIOGRAPHICAL SKETCHES OF THE AUTHORS

Commander Dale R. Mummert,

was commissioned in the Navy Supply Corps after receiving a Bachelor of Arts degree from Miami University, Oxford, Ohio, 7 June 1957. He has served in various supply management assignments, including Supply Officer of the USS Newport News CA-148, Second Fleet, Flagship and a "gun-line" tour in Southeast Asia. Commander Mummert graduated from the Armed Forces Staff College in January 1969. Prior to entering AFIT he was on the Staff of Commander, Service Forces, U.S. Atlantic Fleet. His next assignment is with the National Emergency Airborne Command Post (NEACP), a component of the Joint Chiefs of Staff.

Lieutenant Colonel Burnett R. Sanders II was commissioned in the Regular Army through ROTC and received his Bachelor of Science degree in Business at the University of Kentucky in 1955. Military schooling includes Basic Infantry Officer, Airborne, Fixed and Rotary Wing Flight, Armor Officer Advanced and Command and General Staff College. He served in Korea as aviation company operations officer, in Germany as an Armored Cavalry Squadron Logistics Officer and two aviation tours in Vietnam. Prior to entering AFIT, he instructed at the Armor School, Fort Knox, Kentucky. Upon graduation he will command the 2/17 Air Cavalry Squadron, 101st Airborne Division, Ft. Campbell, Kentucky.

Lieutenant Colonel Roe E. Walker is a 1954 cum laude graduate of the University of Illinois. He received his ROTC commission and entered pilot training that year. Now a Command Pilot, he has served as a Strategic Air Command B-47 and B-52 Aircraft Commander, with 60 combat missions in the B-52D. Prior to entering the Air Force Institute of Technology Graduate Logistics program, he was in a Southeast Asia based EB-66 unit where he completed 80 combat missions and served as the Squadron Operations Officer. Upon graduation from AFIT he will be assigned to the Ogden Defense Depot (DSA) as Deputy Director of the Office of Planning and Management.